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THE SYMPTOMATOLOGY OF TRIFACIAL NEURALGIA

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Identified as a morbid entity more than 120 years ago,[1] seen by almost every practicing physician, and known now as always by its clinical features alone, some misbeliefs concerning the symptomatology of trifacial neuralgia, tic douloureux, are more or less current. Hence the following brief review of the subject based on 220 personal cases, although only 200 have been tabulated for statistical purposes.

So far as I have been able to ascertain, these were all cases of true trifacial neuralgia, typical tic douloureux, *la grande névralgie* of Lévy;[2] not migraine, not sinus disease, not herpes or other symptomatic pains about the face. For, as Head[3] says, "This is a definite disease of the nervous system"; as a German colleague put it, *etwas für sich,* something *sui generis,* not to be confused in nature or doings with anything else. In most of my cases the diagnosis was confirmed by results of treatment. All doubtful ones have been excluded.

SEX

Of the 200 cases tabulated, 96 were in men, 104 in women. Some observers have found the disease more frequent in women, others more frequent in men.[4] Probably the difference is negligible. At one time in my experience I had seen more cases in men than in women. Dana[5] thought it "at least three or four times as frequent in women under 40 as it is in men" (ten women, three men), but probably larger statistics would change his statement. Of my cases which began under 40, twenty were in men and twenty-six in women. But the first seven with onset under 40 were all in women.

AGE

The age of the patients when seen by me has not been tabulated. As the disease had existed from a few weeks to more than twenty years, such a table would have no value and might be misleading. But the age at onset may be noted, especially in view of the opinion expressed by a great observer of wide experience that the malady is essentially one of "the degenerative period of life."[5]

1. Fothergill, 1792, Valleix, 1841.
2. Lévy, Fernand: Essai sur les névralgies faciales, Paris, 1906.
3. Head: Allbutt's System of Medicine, vi, 725.
4. Krause, 9 women to 3 men; Rose, women 5, men none; Horsley, 11 men to 8 women; Head, 7 men to 4 women. Bernhardt's compilation gave 97 men, 52 women; Erb's 51 women and 21 men. Dana's personal statistics were men 20, women 37.
5. Dana, Charles L.: Natural History of Tic Douloureux, THE JOURNAL A. M. A., May 5, 1900, p. 1100.

TABLE 1.—AGE AT ONSET OF TWO HUNDRED CASES

Decade	Number	Per Cent.
First	1	0.5
Second	3	1.5
Third	11	5.5
Fourth	37	18.5
Fifth	56	28
Sixth	59	29.5
Seventh	25	12.5
Eighth	8	4

The most precocious case in this series began at 7, and I have seen another not included in the table which began at 8. As these are quite exceptional cases, probably much more exceptional than my statistics would indicate, a few words about them seem to be in place.

CASE 1.—The first patient was 34 years old when first seen by me, at which time the disease was typical. He had been operated on nine times for the pain and twice for closure of a salivary fistula incidentally caused by one of the other operations. The operations for pain were followed by relief for about the usual period. I had him under observation for more than two years, relieved him by injections of alcohol, and the diagnosis never was in doubt. Of course, I have only his statement as evidence that the disease began at the age of 7, but he gave such a straight and characteristic history that I see no reason to doubt it. For the first four years he suffered for only a week or two each year—intervals which are not at all unusual in this disease—and the pain was confined to the right inferior maxillary branch. After that the periods of pain became more frequent and prolonged and spread to the middle branch. Throughout the pain showed the peculiar, almost pathognomonic features presently to be noted.

CASE 2.—The other patient, who was seen but once, in 1902, when he was 40 years old, began to have facial neuralgia on the left side at the age of 8. During boyhood the attacks recurred about every one to three months and lasted for about a month, though at 13 he had a free interval of one year. Since then the pain has recurred every few months, an attack lasting for from one to five or six months, and has been characteristic of trifacial neuralgia. His general health was good and the results of physical examination were negative except for a slight intention tremor, more distinct on the right side. A recent letter (Jan. 29, 1914) from his physician says that on the treatment I advised (castor oil and aconitin) he improved, but "his attacks still stay with him"; though "they are less frequent, less severe and of shorter duration than ten years ago. . . . His general health is and has been good."

In three cases the disease began at the age of 75, with nothing unusual in symptomatology. More than half the cases (57.5 per cent.) began between 40 and 60, about equally divided between the fifth and sixth decades. The latter may be placed within the involutional period; the former hardly. Certainly neither belongs to the realm of physiologic senility; but the question at once arises, Did not these patients belong to the precocious senile, not old in years but old in tissues? This question must be answered in the

negative. Putting aside the wear and tear of pain, the pull-down of loss of sleep and the depletion of relative starvation, I cannot say that these patients were older than their years. Even if my observation and judgment on this point were at fault, how shall we account for the forty-eight cases (24 per cent. of all), beginning under 40? And how is it that only thirty-three cases (16 per cent.), began over the age of 60? How explain the cases in which the disease has existed for fifteen or twenty years without notable change in vessels or other organs? Further, many of the patients, aside from the neuralgia, presented a picture of robust manhood or womanhood. For instance, a patient now 57 years old, whose neuralgia began twenty-four years ago and was very severe for sixteen years but has been suppressed by treatment for the last eight years, is in perfect physical condition and seems much younger than she is.

A lawyer, aged 62, who did not look over 45, had not had a day free from pain for five years, "had not been in a bed for three months," but got some sleep in a chair after drinking from a pint to a quart of whisky each evening, and had taken not less than half a pint daily for five years, was physically sound. I followed the case for over three years, at the end of which time he showed signs of cirrhosis of the liver, but otherwise was unusually vigorous in body and mind.

Then, I have been asked whether the disease in old persons is not different; whether there is not a senile and juvenile type.[5]

This question, also, my experience answers in the negative. The symptomatology is the same in the young and the old, the strong and the weak, in those with intercurrent disease and in those without it. It is indeed a disorder eminently idiosyncratic; of unknown nature but of unmistakable individuality.

PREDISPOSITION

The diversity of opinions concerning predisposition almost forces one to conclude that nothing definite is known. Head[6] says that these patients "are in no sense of the word neurotic," Oppenheim[7] that "neuropathic predisposition (*Belastung*) plays an important rôle in the etiology," and Grasset[8] that the nervous temperament is the principal predisposing influence. Lévy[2] divides them into (1) *des arthritiques*, (2) *des neuro-arthritiques* and (3) *des nerveux*. Exactly what a Frenchman means by "arthritic" is about as difficult to say as what an American means by "lithemic" or "rheumatic" or an Englishman by "gouty." The terms are all vague, essentially different but loosely synonymous.

The problem of neuropathic predisposition is a poor one for statistical solution. The answer must largely be one of opinion. I have the impression that my patients were rather more nervous than the average, but certainly as a class they have not been essentially or even notably neurotic. That there is no direct and similar heredity in facial neuralgia seems quite clear. Though in seven of my cases there was a history of this disease in ascendants or other relatives, in no case was a parent affected.* Not one of my patients had a psychosis, not one epilepsy, and not one was mentally defective. Outspoken hysteria has been conspicuous by its absence. A few have been unstable and emotional, but when a person for two or ten or twenty years has had paroxysms of excruciating pain—pain started by eating, drinking, talking and washing the face—pain that may suddenly awaken him out of a sound sleep or jab him at any moment during the day—we cannot reasonably expect that mental stability and emotional equipoise called normal. Particularly worthy of note is the fact that only one of the 220 patients had really contracted the morphin habit. Of course many of them were taking morphin for the pain, but when treatment stopped the neuralgia, the patients stopped the drug. The exception was the man in whom the disease had begun at the age of 7, and his morphinism was not bad.

In one respect, however, trifacial neuralgia does seem to have a neuropathic relationship. Some years ago Putnam[9] called attention to some relations of migraine to neuralgia, and Dana[5] as well as Lévy[10] and others have noted their frequent association. In my own cases of neuralgia, migraine has been by far the most frequent neurologic concomitant. Of 200 patients forty may fairly be said to have had migraine, certainly a much higher ratio than that observed in the ordinary run of patients.

SIDE AFFECTED

In 62.4 per cent. of the cases the trouble began on the right side, in 37.1 per cent. on the left, and in one case, 0.5 per cent., simultaneously on both. These figures agree fairly well with those of Sicard,[11] who has seen a very large number of cases. Dana's[12] figures are right, twenty-two, left, fourteen. The ratio changes somewhat if we consider the cases not at the time of onset but when under observation, because by that time some of them have become bilateral. My statistics are: right, 52.3 per cent.; left, 40.9 per cent.; bilateral, 6.8 per cent.[13] In no case, however, was there severe neuralgia on both sides at the same time. In a few there was severe pain on one side, with more or less frequent twinges on the other. In the majority the pain on one side, having spontaneously disappeared or yielded to treatment, appeared on the other. In only one case, so far as I know, did this alternation occur more than once. In this case the pain alternated every few days. In one case the two infra-orbital nerves had been simultaneously operated on, with relief, and in another case cutting one infra-orbital nerve had relieved pain on both sides. For the preponderance of the right side I have no explanation.

BRANCH INVOLVED

One of the most current misconceptions of the symptomatology of trifacial neuralgia relates to the location of the pain. Apparently only those with considerable experience who at the same time have given the subject careful attention have noted the truth. Obviously much of the error is due to uncritical repetition of earlier statements. I have asked many general practitioners which branch they con-

6. Allbutt's System of Medicine, vi, 732.
7. Oppenheim: Lehrbuch der Nervenkrankheiten, Ed. 6, p. 736.
8. Grasset: Maladies du system nerveux, ii, 114.

* Since writing this passage I have seen one patient who says her mother has the same disease.

9. Putnam: Boston Med. and Surg. Jour., 1896, cxxxv, II; Jour. Nerv. and Ment. Dis., March, 1900, p. 129.
10. Lévy: Essai sur les néuralgies faciales, p. 47.
11. Sicard: Personal communication to the author.
12. Dana, Charles L.: Natural History of Tic Douloureux, THE JOURNAL A. M. A., May 5, 1900, p. 1100, footnote.
13. This includes cases not bilateral when first seen, but which became so during observation. Compared with the experience of others, this is a high proportion of bilateral cases.

sidered the most frequently involved, and have almost invariably received the same answer: the first or supra-orbital. From not a few good neurologists I have had the same reply. Needless to say, many standard text-books make the same statement. For instance, Bernhardt[14] gives the relative frequency as first branch, 101; second, twenty-seven; third, eleven. Jelliffe[15] says, "the ophthalmic branch the oftenest, the inferior maxillary least often." Wertheim Salomonson[16] says that he found the first branch involved in 39 per cent., second branch in 20.2 per cent., and third in 32 per cent. He does not account for the remaining 8.8 per cent. Even Oppenheim[17] in his matchless work says, "Particularly often is the first branch affected." This is wrong. It is by far the least frequently involved. My figures are as follows: The trouble began in the supra-orbital branch in only 8.5 per cent. of the cases, in the middle or infra-orbital branch in 49 per cent., in the third or inferior dental division in 25 per cent., and in two or more branches in 7.5 per cent. But even this small percentage for the first branch is greatly reduced if we analyze the cases as seen. In only two (1 per cent.) of the 200 cases when first examined by me was the pain limited to the first branch. Could all of the patients have been seen at the time of onset, I believe that the foregoing 8.5 per cent. would be considerably reduced because of a strange peculiarity of this disease, which will be described below but may be mentioned here. In some cases, while the pain is particularly troublesome in the first branch, it really originates in the second branch, which was primarily affected but in which the pain is less severe. Later on, in giving the history of his trouble, the patient forgets the trifling pain in the middle area and states that the pain began in the supra-orbital region. I may add that others who in the last few years have studied this disease have come to a conclusion similar to mine.[18] The cause of this gross error, I believe, lies in the former confusion of migraine (long popularly known as "neuralgic headache"), the pain of sinus disease and probably supra-orbital herpes with true neuralgia.

For the other branches an analysis of my cases shows, in round numbers, the following incidence: Pain limited to the second division, 11.5 per cent. (right, 7 per cent.; left, 4.5 per cent.). Pain limited to the third division, 17 per cent. (right, 11; left, 6).

Pain in first and second divisions, 15 per cent. (right, 10; left, 5). Pain in second and third divisions, 28 per cent. (right, 16; left, 12). Pain in all three branches, 10 per cent. (5 per cent. on each side). The sum total of the involvement of each branch, whether alone or in combination, is shown in Table 2:

TABLE 2.—INCIDENCE OF PAIN ACCORDING TO BRANCH INVOLVED

Branch	Times		Cases
	No.	Per Cent.	Per Cent.
First	71	18.5	35.5
Second	167	43.6	83.5
Third	145	37.9	72.5

The most useful conclusion to be drawn from all of these figures is that *pain limited to the supra-orbital region* probably is not neuralgia at all. Of considerable interest, however, is the fact that in 47 per cent. of the cases, pain was limited to one division of the nerve, in 43 per cent. to two branches, and that in only 10 per cent. were all three involved. These figures, it seems to me, make it difficult to assume that the disease is located in the gasserian ganglion. But of this more farther on. It is also to be noted that in no case was there pain in the first and third divisions, the second being free. Two branches being involved, the combination always was first and second or second and third, the latter combination being almost twice as frequent as the former.

14. Bernhardt: Nothnagel's Specielle Pathologie und Therapie, xi, 245.
15. Jelliffe: Osler's Modern Medicine, vii, 777.
16. Salomonson, Wertheim: In Lewandowsky's Handbuch, ii, 16.
17. Oppenheim: Lehrbuch der Nervenkrankheiten, Ed. 6, p. 738.
18. Lévy: Essai sur les névralgies faciales, p. 147. Sicard: Personal communication. Alexander: Personal communication.

CHARACTERISTICS OF THE PAIN

This is a short chapter, and yet here also are found some misapprehension and a little misinformation.

The pain of trifacial neuralgia is essentially *short-lived*. To this rule I have known only a single exception. Nearly always the disease begins with an instantaneous sharp pain and for some time is manifested by a repetition of such pains. Shoot, stab, jab, flash, dart, knock, zipp, twinge, bing, shock, are words patients have used in the description. Not infrequently the pain is likened to that caused by touching an exposed nerve or to the shock of an instantaneous electric current or to a bit of zigzag lightning in the face. Occasionally the inception is by a severe pain of appreciable duration, say a few seconds, and very rarely it is preceded for a short time by a vague sense of discomfort or paresthesia of some sort.

In exceptional cases the patient may have nothing but the instantaneous pains for years, but ordinarily after some months they become of longer duration, constituting a paroxysm, but they are always short. I have seen one case in which the single pains lasted fifteen minutes and one in which they were as long as five minutes. These were the longest. Pains of more than two minutes are very exceptional. In bad cases, patients may state that the pain continues for an hour or more; but these are instances of very rapid succession of brief paroxysms.

The moral is that any pain about the face, forehead or temple which is a steady ache, even with exacerbations, or which is continuous for half an hour or more, is not trifacial neuralgia. Nor does the pain of this disease throb with the pulse. My one exception is as follows:

CASE 3.—A woman, aged 58, who gave a history of migraine from the age of 30 to the menopause at 48, was seen, Sept. 22, 1908. Four years before she had begun to have a steady pain in the right upper alveolus. (There were no teeth.) The pain remained limited to this region until March, 1908, when it extended upward in front of the ear and for the last two months had involved the right forehead. The pain was constant, worse at night and so severe that she required morphin every night. The patient said that the pain was deep-seated, "in the bones." It was not aggravated by eating, talking or washing the face. Some months before the onset of the pain, two tumors, said to be sarcomas, had been removed from the scalp of the right occipital region. The heart was hypertrophied, second aortic sharply accentuated. The urine contained a trace of albumin and numerous granular and hyaline casts. Although I could find no other evidence of organic disease, and a competent rhinologist could find no disease of the accessory sinuses of the nose, I declined to treat the case as one of neuralgia and sent the patient back to her physician.

She returned just three years later to demonstrate my mistake. During the winter following her visit to me the

pain began to be paroxysmal. It was still more severe at night, though during the day she was seldom free for more than half an hour. Not until about a year before had she noticed that at times washing the face, eating, etc., would start the pain, but this characteristic feature (see below) had since then been constant. I found, however, that it required a sharp rub of the skin or percussion over the malar bone to start a paroxysm. Generally it was spontaneous. There was no more evidence of local or central organic disease than before, and she was relieved by injections of alcohol. After a time the pain returned, more typical in character, and June 28 and July 1, 1912, she was again injected, there being at this time no cause to question the diagnosis. A report from her physician, Feb. 21, 1914, says that "she is getting along fairly well, not enough pain to prevent her from going about normally." "She is gaining in weight and seems quite contented." So I think it is fair to conclude that the case is one of trifacial neuralgia and not pain due to some undiscovered organic disease.

The pain of trifacial neuralgia is *severe*. In the very beginning the little darts of pain may not be very distressing, and occasionally in a developed case the patient has between his paroxysms minor pains, or paresthesias or discomfort; but these are negligible features. The real pain, be it for one-tenth second or five minutes, hurts with a poignant, piercing hurt. In most cases it is excruciating. Consequently, any dull or throbbing ache, sense of pressure or weight or drawing, or a feeling of heat or cold, however distressing it may be, is not facial neuralgia.

One of the most striking features of the pain, one which is of paramount value in diagnosis, is that it is started by *relatively slight peripheral irritation*. A sharp rub with the finger somewhere on the face or in the oral cavity may be counted on to start it.[19] This test may not apply at any given moment, but if repeated at different times it is practically certain to succeed. In many instances the peripheral stimulus may be wondrously slight. A touch on the moustache, a breath of air, a fly alighting on the face, simple nictitation may suffice.

If, then, we find that our patient is eating and drinking (especially cold liquids) washing the face and cleaning the teeth with impunity, we may be pretty certain that he is not suffering with trifacial neuralgia. A patient who has been *rubbing* the face with liniments, making cold applications or using massage,[20] has something else. Indeed, if the sufferer indicates the seat of the pain by touching the face, a doubt that he has neuralgia at once arises. Obversely, he is constantly on guard, warding off any contact in the sensitive area. He shrinks when the examiner approaches to test sensation.

This serves to introduce what I have called *dolorgenetic zones*.[21] By such a zone I mean an area in which a slight irritation starts the pain. In a bad case with involvement of all three branches, a touch or momentary friction anywhere in the distribution of the fifth nerve may start a paroxysm. Sometimes, however, these zones are peculiarly restricted: a spot on the lip or at the wing of the nose no larger than a finger-nail. Such are the cases in which tapping a tooth, and only one, starts the pain. In the beginning the pain may be confined to the point from which it is started: to what one might call the trigger area. I have seen one case in which a wedge-shaped piece had been excised from the lip because at the time of the operation the pain was started by touching this spot and was confined to it. We know how many hundreds of thousands of teeth, good and bad, have been sacrificed to this disease, though, of course, they were not all "trigger teeth."[22] But an interesting and unexplained[23] variation of the pain-genetic or trigger zones is that the zone may be in one place and the pain in another. Touching the lower lip may cause a pain not there but in the tongue. Rubbing the nose may start a shoot of pain or a severe paroxysm in the upper lip, the nose being painless. Stranger still, the trigger zone may be in the distribution of one division of the nerve and the pain in another. Rubbing the chin may cause pain not in the inferior maxillary distribution but in the upper lip or wing of the nose. Ordinary use of the handkerchief may cause a shoot of pain over the eye. A number of times I have known the act of swallowing to cause pain in neither the second nor the third division, but in the supra-orbital branch. Indeed, this correlation of second to first branch is relatively frequent, but I recall only one case in which the reverse order obtained: the trigger area in the supra-orbital and the pain in the superior maxillary. With one exception, too, the trigger area has been in the same or in the adjoining division. In one case rubbing the lower lip caused pain in the forehead, none in the lower or middle branch; but this patient had been injected about two and a half years before.

Needless to say, the trigger zones are of considerable importance in relation to local treatment. Obviously it is useless to operate only on the supra-orbital nerve if there be a trigger zone on the cheek, or to attack the second division at the infra-orbital foramen if deglutition starts pain. In fact, it is better to attack first the branch supplying the trigger zone. In a number of cases treatment of the middle branch alone has sufficed to suppress pain in the supra-orbital.

Perhaps this is the best place to note that occasionally the pain irradiates into cervical nerves and even down the arms, and that in a couple of instances using the arms or percussion of them might start the facial pain.

Just here a few words may be said of the classic *tender points* or pressure-points of Valleix; and these words in substance are, *non sunt*. So far as trifacial neuralgia is concerned the points do not exist, many standard text-books to the contrary notwithstanding.[24] Firm pressure of any nerve of sensation against bone is painful—as witness the ulnar at the elbow. Consequently, pressure at the mental or infra-orbital foramen is painful, and every schoolboy knows that pressure at the supra-orbital notch hurts. It is also true that in tic douloureux, pressure at one of these points often will start a paroxysm of pain and that the patient is exceedingly timid about having them

19. For exception see Case 3.

20. I have known one or two exceptions to this rule. In a not very severe case the massage instantly starts the pain, but if persisted in may not continue to do so, and in one or two instances the patient thought that he felt more comfortable after massage. In the same way, when the patient begins to eat, the jabs of pain are frequent; but if he persists, after a little time he may eat in comfort.

21. Patrick, Hugh T.: The Technic and Results of Deep Injections of Alcohol for Trifacial Neuralgia, THE JOURNAL A. M. A., Jan. 20, 1912, p. 155, Alge-genetic would be better.

22. The last (sixth) edition of Oppenheim, which probably is the best existing exposition of modern neurology, contains the perfectly futile advice to remove all carious teeth that are sensitive to pressure or percussion, especially if a paroxysm can be started by such pressure or tapping. If a carious tooth, then why not a sound one? As a matter of fact, so far as I can ascertain, extraction of teeth never cures the disease.

23. Presumably these phenomena belong with the "referred pains" so fully described by Dana and Head; but a satisfactory *explanation* is still wanting.

24. So far as I know, Romberg (Arch. f. Psych., 1868) is the only one who categorically denies their occurrence.

touched; but by that same token brushing the skin lightly with the finger will also start the pain and, as before emphasized, the sufferer is mighty chary of touching the face anywhere within the trigger zone. Furthermore, these points are abnormally tender in manifold painful affections about the head and face. I may instance disease of the antrum and frontal sinus, alveolar abscess, specific periostitis, glaucoma and notably tenderness at the supra-orbital notch in frontal migraine. In short, the tender points of Valleix as such are absent in tic douloureux, present in many other affections, and are a semeiologic delusion and a diagnostic snare.[25]

DURATION AND COURSE

Trifacial neuralgia is essentially chronic, with no tendency to recover. Dana[8] believes that sometimes it is self-limited or tends to spontaneous cure. I know of no such case, nor have I come across a case of definite cure by other than surgical means.

If the disease always is persistent it is almost equally remittent. To be sure, there are cases in which it is continuous, not a day's respite for five, ten, even twenty years; but periods of remission are the rule, and such a spontaneous remission may last for two years, five years or even more. Quiescent periods of from four to six months are very frequent. In the same case they vary in frequency and duration. On the whole, the affection tends to grow worse with time, though the stage of instantaneous jabs at infrequent intervals may last for years. On the other hand, some patients have frightful paroxysms lasting from one-half to one minute almost from the beginning. Case 2, in which the pain began when the patient was 8 years old and has continued at intervals for forty-four years without material increase, is exceptional.

I have not observed that intercurrent disease has much to do with either course or duration of trifacial neuralgia; but it has seemed to me in several instances that worry, grief or prolonged emotional tension had a most unfavorable influence.

Ordinarily the season of the year has little or nothing to do with the pain, but occasionally it shows a tendency to recur in the winter or in the summer. Most patients are free from pain at night unless the bedding happens to touch a trigger zone, but in a few of my cases the pain was worse at night. I think that the preponderance of day cases is due to the unavoidable sensory stimulus of talking, eating, currents of air, nictitation, etc. Occasionally the recumbent posture aggravates the pain, but I have seen two or three cases in which, aside from peripheral stimulus and posture, the night season seemed to have an unfavorable influence.

TROPHIC AND VASOMOTOR MANIFESTATIONS

A great many authors, especially the older ones, have included trophic disorders in the symptomatology of facial neuralgia.[26] Hypertrophy, atrophy and deformity have been described. Vesiculation, hypertrichosis, alopecia and whitening of the hair have also been reported. I have seen none of these things. Vesiculation, of course, belongs to herpes (zoster), a quite different disease. I have observed swelling (sometimes very chronic) and atrophy as a result of operation, swelling from cantharides or other irritating applications, excoriation and wearing away of hair from friction (see below), and thickening of the skin from the same cause, but no really trophic complication. Not at all rarely patients have stated that the face swelled during attacks of pain, but I believe that this was simply a sensation or an erroneous conclusion from the redness and vascular engorgement. During the paroxysms of pain, mild vasomotor and secretory signs are often seen. In my experience these have been confined to flushing, lacrimation, salivation, nasal flow and perspiration. I have never observed paling, nor have I seen perspiration confined to the painful area or even to the painful side. Sudoration from suffering occurs in this as in other painful maladies, and I have seen it more abundant on the painful side. Flushing or obvious dilatation of vessels restricted to the region of pain is rare. When the upper and middle branches are involved, lacrimation during the pain is rather frequent, and may be present when the upper alone is affected. Increased salivary flow[27] during the paroxysms is often noted in inferior branch cases. I have not been able to satisfy myself that it was present in the interparoxysmal period, though several patients have asserted this to be the case. I think the trouble was simply that the patients neither swallowed nor expectorated saliva because these acts caused pain. In one case, during the pain there was profuse watery discharge from the nose on the affected side, and in a few other cases this symptom was present to a minor degree.

In one case the teeth fell out after the onset of neuralgia.

THE ELEMENT OF TIC

The French name *tic douloureux*[28] or painful tic was given the disease not on account of the character of the pain but because of certain movements of the face which sometimes accompany it. Tic means an oft-repeated, abnormal movement with certain characteristics.[29] As applied to trifacial neuralgia it is a misnomer and, indeed, is being rapidly dropped by the French themselves. The motor element in facial neuralgia is non-essential and secondary. Indeed, immobility is much more characteristic than movement. In bad cases the patient not only avoids touching the face, but also holds the features so immobile as to interfere with speech and closely to simulate the facies of paralysis agitans. Even quick movements of the head and arms are avoided.

During the paroxysms of pain, various movements may be observed, none of them like tic. In a few cases one sees little fibrillary twitchings or quiverings of the facial muscles. These are exceptional in trifacial neuralgia and never occur in tic. All other movements in the former disease are purely voluntary and simply constitute the way in which the *individual* reacts to pain. Some persons contract the muscles on the painful side just as they probably would with severe toothache or if they were being cut with a knife.

25. Valleix described these points seventy-two years ago when almost any pain about the face was called neuralgia. His writings show that he found them in many troubles, especially in what Lévy calls *les petites névralgies:* fugitive facial pains due to tender teeth, "catching cold," "rheumatism," what I have been driven to call "the pain diathesis," etc.

26. Bellingeri, 1818-1834; Neucourt, 1849-1854; Berard, 1835; Trousseau, 1865.

27. André says that it is present in all cases. Notta and Valleix think it rare.

28. André, 1756.

29. Patrick, Hugh T.: Convulsive Tic, THE JOURNAL A. M. A., Feb. 11, 1905, p. 437; ibid., May 1, 1909; Jour. Nerv. and Ment. Dis., January, 1909.

Others immediately begin to rub the face and, as mentioned above, this may be done so frequently and so vigorously as to excoriate the skin or wear away the hair of the beard or eyebrow.[30] Some patients puff out the cheeks with the greatest possible tension, some execute chewing, tasting, pouting or sucking movements, some lick the lips, some scream, some walk the floor and some sit as rigid and immobile as one in an attack of angina pectoris. But whatever the movements may be, and some of them are very bizarre, they are just about as nearly related to tic as was the voluble profanity of one patient or were the excessive potations of another.

COMPLICATIONS

These are of interest principally in relation to etiology and treatment but, I presume, belong to symptomatology. Some of the neurologic or neuropathic complications have been noted above. It has been thought[31] that tabetic pains in the face may simulate trifacial neuralgia or that some cases of the latter disease are of tabetic origin. I have never seen a case that I thought belonged in either category, though I have had one case of facial neuralgia in a tabetic.

Case 4.—The patient, a woman aged 49, presented all the most significant signs of tabes,[32] and for fifteen years had suffered with typical lightning pains, chiefly in the legs, but occasionally in the arms and trunk. Thirteen months before she had begun to have pain in the left face. It was limited to the infra-orbital branch of that side, came in short jabs or paroxysms, and was started by eating, talking, washing the face, etc. These "crashes" of pain recurred from five to fifteen times a day, and since the onset she had not had one whole day free from them."

In this connection, the possible relation of syphilis to facial neuralgia may be mentioned. I have had but one case in which it seemed possible that lues might be the cause, and in this case the doubt never has been settled. On the whole, syphilis has been notable by its rarity, and when present has, I believe, been a coincidence.

Next to migraine, to my mind the most interesting complications are coincident or preëxisting infections and irritations about the face but, I regret to say, my statistics on this head are not sufficiently definite and extensive to be of great value. It may clearly be asserted, however, that there is no uniformity or even great preponderance of such complications. I have the impression that they are more frequent in trifacial cases than in the ordinary run of patients, but of this I cannot be sure. Pyorrhea has not been frequent.[33] Carious teeth and alveolar abscess have been frequent, but they are common affections. Ten patients had at the time, or gave a history of, antral or other sinus infection; but as the incidence of such diseases in the community is not known, no just comparison can be made. The probable unimportance of such complications is indicated by the fact that in no case have I known treatment of a sinus or tooth infection or extraction of carious or painful teeth to cure trifacial neuralgia.[34] On the other hand, treatment of neuralgia complicated by chronic sinus disease has been as successful as in uncomplicated cases. In a number of instances extraction of diseased or normal teeth has given relief for a period, generally a few days or weeks, but sometimes for a longer time. In one case filling a bicuspid cavity which apparently communicated with the dental canal was followed by cessation of the pain for two years. If mere infection in the fifth area were a causative factor, how many cases would we see due to acne pustules, boils, etc! In my experience infection or inflammation of eyes, ears, skin and throat has been too rare to merit notice.

In one case direct irritation of the inferior dental nerve apparently started the disease, which then ran a typical course. At the age of 29 the lower jaw was damaged in the extraction of a bicuspid or molar tooth. Severe paroxysmal pain immediately followed. A week or two later a surgeon who designed to remove dead bone and cut the nerve, fractured the jaw. The pain ceased for a year, and then recurred with great severity. I saw the patient at the age of 72. In the meantime she had been operated on seventeen times. History of the pain and results of operation were typical of trifacial neuralgia, and the paroxysms which I witnessed were unmistakable. She was relieved by injections of alcohol until her death from heart-disease three years later. I have always suspected that the tooth was removed not because of toothache but because of incipient neuralgia: in other words, that the neuralgia had begun before the traumatism.

In 1870 Gross[35] described a neuralgia of the toothless for which he cut away a part of the alveolar process. Later his idea was taken up and elaborated by Duplay[36] and Jarre[37] who operated in a similar way. I think that this *névralgie des édentés* is not an entity, and that the operation has now quite properly been abandoned.

That some toxic state is the cause of or is in intimate relation with trifacial neuralgia is the opinion or impression of many physicians. Ordinary investigation of my cases does not support this view. Metallic poison (especially lead) was present in none. Acute general infections were not unusually frequent, and in only one case (typhoid) immediately preceded the onset of neuralgia. Chronic alcoholism was clear in only one case, though several of the men took large quantities of whisky to relieve the pain. Rheumatism and gout were not unduly frequent, and there was no case of outspoken arthritis deformans (rheumatoid arthritis). Diabetes was observed only once. Nine patients[38] showed evidence of chronic nephritis but, considering the age of the patients, this number does not seem high. Indicanuria was not sufficiently frequent to indicate a pathologic relation.

In view of frequent statements in text-books, it is worthy of note that malaria was present in not a single

30. The striking contrast of the *noli me tangere* attitude of the patient in the interparoxysmal period, with the vigorous scouring of the face the moment the pain starts, is something seen in no other disease.

31. Pierret: Essai sur les symptômes céphaliques du tabes dorsalis, Thèse de Paris, 1876. Lévy: Essai sur les névralgies faciales, p. 134.

32. This was before the time of the Wassermann, and no lumbar puncture was made. The husband had had a venereal sore prior to marriage, twenty-six years before.

33. It goes without saying that many patients have come with foul mouths, but this was because for weeks or months they had forborne to cleanse the teeth or even rinse the mouth, every such attempt starting a paroxysm of pain.

34. Hajek, whose book (Erkrankungen der Nebenhöhlen der Nase) is probably the best one on sinus disease, has never seen tic douloureux in such disease. Ed. 3, p. 14.

35. Gross: A Form of Neuralgia of the Jaw-Bone Hitherto Undescribed, Am. Jour. Med. Sc., July, 1870.

36. Duplay: Arch. gén. de méd., 1886; Gaz. d. Hôp., 1894.

37. Jarre: Acad. de méd., 1893; Rev. de stomatol., 1894.

38. Six had albumin, three albumin and casts and two pus and albumin, the latter presumably due to the former.

case when seen and was very rare in the history; certainly not above the average in the territory tributary to Chicago.

SPECIAL SENSES

Various affections of the special senses have been described as part of trifacial neuralgia. In my opinion they do not exist. All such cases are examples of diagnostic error or mere coincidence. Especially is it to be stated that taste and smell are normal. Of still greater importance is the fact that trifacial neuralgia never causes blunting of sensation. In no case have I been able to find anesthesia or analgesia. Sensation for heat and cold has not been systematically examined. In other words, if, in a painful affection of the face, there be involvement of a special sense, either the latter is to be separately accounted for or the case is not neuralgia. If there be blunting of common sensation, it is due to organic disease, which probably also is the cause of pain, or to operation, or to thickening of the epidermis from friction or applications, or it is a hysteric symptom superadded. The last-mentioned I have never seen in facial neuralgia, but I have seen one or two cases of hysterical hyperesthesia.

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SYPHILIS AS A PUBLIC HEALTH QUESTION *

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While March 24 is memorable in the history of tuberculosis, let me remind you that there is another day in this month which is equally memorable in the history of another world-wide disease. It was on March 3, 1905, that Schaudinn first saw *Spirochaeta pallida*, the cause of syphilis. The account of this discovery, written by Schaudinn and Hoffmann,[1] is dated April 10, 1905, exactly twenty-three years after the publication of Koch's[2] paper on the etiology of tuberculosis. This mere coincidence in dates may serve to emphasize the truer connection of Koch's labors with the recent renaissance in our knowledge of syphilis.

Syphilis has been definitely known to our civilization since the last part of the fifteenth century. In regard to its earlier history, medical historians are not yet agreed.[3] At all events, up to 1903 the disease had been studied clinically for over four hundred years and many of its symptoms and their treatment were well understood. The situation at that time has been described by Neisser, and no one was better qualified than he to describe it. Neisser[4] says that, in spite of all the work that had been done, investigation of the disease had reached a dead level. The cause was unknown and animal experimentation was apparently impossible. No advances were being made because the methods which had revealed the secrets of other infectious diseases were not being applied to syphilis.

In 1903, however, Metchnikoff and Roux[5] showed conclusively that the disease could be transmitted to the lower animals and thus opened up the rich field of animal experimentation. In 1905 Schaudinn discovered the cause and thus made possible the certain identification of the disease as an entity. In 1906, Wassermann, Neisser and Bruck[6] introduced the indirect method of diagnosis by the serum reaction, which reveals the presence of the disease when all outward symptoms have disappeared. In 1910 Ehrlich[7] gave to the world salvarsan, a specific, synthetic spirocheticide, the result of many years of experiment. In 1911 Noguchi[8] cultivated *Spirochaeta pallida* in pure culture and made his remarkable product, luetin, which detects the disease in its most obscure forms. In 1913 Noguchi[9] demonstrated *Spirochaeta pallida* in the brain of paretics and in the cord of a tabetic, thus bringing these baffling conditions into simple relation with the rest of the disease and rounding out our conceptions of the whole infection.

As we look back on the unparalleled achievements of these ten years, we see that these results have all come, not from the clinic, but from the laboratory; not from professional syphilologists and psychiatrists, but from pathologists, parasitologists, serologists and experimenters. I make this point, not to try to belittle the work of the clinician, because, after all, he is the man on the firing-line, but to emphasize the comprehensive method of reconnoiter and the strategic method of attack. This is the etiologic method; to find the cause of an infectious disease in the specific lesions; to isolate and to study the parasite in pure culture; to introduce it into a lower animal and to observe the reactions of the tissues and the body fluids to the invading organism or its products; to trace the parasite through the different parts of the body; to determine how it leaves the body and passes from one person to another; to try to kill the parasite when and where it is most vulnerable, by disinfectants, internal or external.

Whose method is this but Koch's? To him more than to any one man or set of men we are indebted for the correct way to study infectious diseases and, therefore, it is only tracing the swelling stream of our knowledge of syphilis to its source when we meet "to honor the memory of Robert Koch and to recall his eminent services to the cause of public health."

What have been the practical results of these services so far, and what is the outlook for the future? Popular warfare on these parasites is the order of the day. Our age has already been characterized by the medical historian as one of social and preventive medicine.[10] Society itself is considered a patient and members of society in general are more or less self-constituted physicians. This attitude is due directly to definite advances in the science and art of medicine. Following the increase in our knowledge of tuberculosis, we have for a number of years seen a splendid attack on the disease, in which institutes like this one are most effective agencies. As a result of the

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* Read at the Phipps Institute, University of Pennsylvania, Department of Medicine, Philadelphia, March 24, 1914.

1. Schaudinn: Arb. a. d. k. Gsndhtsamte, 1905, xxii, 527.
2. Koch: Berl. klin. Wchnschr., 1882, xix, 221.
3. Garrison: History of Medicine, W. B. Saunders Company, Philadelphia, 1913, p. 128.
4. Neisser: Die experimentelle Syphilisforschung, 1906, Julius Springer, Berlin, 1.
5. Metchnikoff and Roux: Ann. de l'Inst. Pasteur, 1903, p. 809.
6. Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr., 1906, xxxii, 745.
7. Ehrlich and Hata: Die experimentelle Chemotherapie der Spirillosen, 1910, Julius Springer, Berlin.
8. Noguchi: Jour. Exper. Med., 1911, 99, 557.
9. Noguchi and Moore: Jour. Exper. Med., 1913, xvii, 232.
10. Garrison: History of Medicine, 1913, p. 594.

advances in our knowledge of syphilis, the popular attack on this disease has already begun, and, from the purely scientific point of view, we are in a much better position to attack syphilis than we are to attack tuberculosis. In most early cases we can ascertain how, when and where the disease was contracted. We can identify it on its earliest manifestation and we can cut it short by radical treatment. In the later stages we can make a diagnosis of its most obscure forms and can control its course in many instances, even if we cannot make a complete cure. We have effective methods of prevention.

With all this wealth of means at hand, it might seem a simple matter to put them into effect against the disease, and so it is in individual or selected cases. But when we come to the question of their general application we encounter an unusual obstacle which cannot be ignored. The extreme medical position is of course that syphilis should be attacked in the same way as other infectious diseases, such as tuberculosis, typhoid fever or diphtheria, by detection and removal of the sources of infection, by early diagnosis, isolation, prompt treatment and by various methods of protection. But this position is attacked by many social reformers, who say that the medical program is a failure in practice and that it tends to legalize immorality. The first objection concerns us professionally and the second one concerns us as members of society, because, as I take it, we are not indifferent to the moral welfare of society.

In regard to the strictly medical and hygienic program, let me say again, that, from the purely scientific point of view, we are in an excellent position to control syphilis. If we could have a free hand to apply well-known medical measures, we could appreciably reduce the amount of the disease. If the full force of our sanitary organizations were directed against syphilis as they would be against an invasion of cholera or plague, who can say that the disease would not be greatly restricted? To deny this is to ignore the splendid triumphs of preventive medicine in other diseases. Yet, as was said, some moralists[11] seem to take particular delight in pointing out the failure of preventive acts and regulations. No doubt these measures have more or less failed of their object, but they have failed, not because they are wrong in scientific principle, but because they have not been carried out thoroughly. When preventive measures are carried out thoroughly, as they can be and have been under military jurisdiction, the results are just as certain as they are in any other infectious disease, just as certain as any other natural consequence.[12]

But can these measures be carried out generally? Not in their entirety. To carry out these measures logically we must, indeed, legalize immorality and also invade personal liberty to such an extent that society would rebel. In other words, this disease is on a somewhat different footing from tuberculosis, diphtheria and typhoid fever. Syphilis is essentially a sexual disease and sexual relationships cannot be treated altogether like the other relationships of life. For example, our records in the Army show that only 6 or 7 per cent. of primary infections are extragenital and that only 1.5 per cent. are, as we say, in line of duty; that is, not the result of the patient's own misconduct. In women, the percentage of innocent infection is much higher, Fournier[13] says from 20 to 25 per cent., but even in these cases the disease is acquired sexually, so that extragenital infections, such as have been reported by Bulkeley and Scheuer[14] as amounting to over twenty thousand cases, really form a comparatively small part of the total amount.

The endemic center of the disease is therefore in the irregular sexual life of the race, and a direct medical attack on the source of the infection is out of the question. It will be a long day before a sanitary map of a town will be made with dots for the cases of syphilis and placards for infected houses, and before sanitary inspectors set to work to trace down each infection and to examine contacts, etc. Nor would we wish to see this day if it were realizable, because it would involve too many social questions. But if a strictly medical program is impracticable, much can be done by a modified medical program. Even if society cannot recognize its enemy, it can protect itself in many ways.

Let us examine for a moment the alternative program of education and reform. We are in the midst of this movement now. On every hand the subject is being discussed. Plays have been written on it, eugenic societies are active, charitable organizations are concerned, laws have been passed and courses given in schools. Some of these activities are admirable, and especially where medical measures are involved, they are already producing results. But in some quarters the agitation has been overdone and already a reaction may be felt. Some enthusiasts have gone beyond the bounds of decency in their discussion of the subject. They seem to think that the naked truth has some special virtue and if sufficiently paraded will automatically settle the question. I see no warrant for any such position. The deeper we go into human nature the nearer we approach the savage, and the nearer we approach the savage the farther we go from morality and manners. If the uplifters point out the failure of sanitary measures, are they prepared to show any extraordinary practical results in the way of education and reform? If they decry sanitary measures as making for immorality, are they prepared to say that the activities of some of their members do not make for indecency? There may well be some things worse than syphilis; one may be legalized immorality; another may be tolerated indecency.

In brief, the subject of syphilis as a public health matter is an immense problem and calls for the cooperation of many agencies. It is not merely a medical problem, or merely a question of education and reform. The indications seem to be for us as physicians to find out what can be done in a medical way, and to stand ready to push purely medical means when they are practicable and to realize our limitations when such means are not practicable; in the homely phrase, to do the best we can.

PREVALENCE

If it is neither practicable nor desirable to put into effect a rigid sanitary program, what are the possibilities of a modified sanitary program? The first question which naturally arises is, What is the prevalence

11. Flexner: Prostitution in Europe, Century Company, New York, 1913.
12. Munson: Military Hygiene, William Wood & Co., New York, 1901, p. 836.
13. Fournier: Treatment and Prophylaxis of Syphilis, Rebman Co., New York.
14. Scheuer: Die Syphilis der Unschuldigen, Rebman Co., New York, 1910, p. 14.

of the disease in a given locality? No definite answer can be given to this question for most localities, and therefore we have, at the outset, a most pertinent and feasible field of inquiry. Time-honored estimates have been made, such as 12 per cent. for the adult population of Berlin by Erb, 15 per cent. in Paris by Fournier, and 12 per cent. in London. These figures really tell us little except that the disease is sufficiently prevalent.

What we need is an accurate statement of the amount of disease among the various groups of our population, such as children of different social position, men and women employed in various occupations, etc. This information is not easy to obtain by direct examination in most cases, but fortunately in the Wassermann reaction we have a means of obtaining a certain amount of information which can be applied on a large scale and with little offense. Apparently no better start can be made in a public health way than the initiation of Wassermann reaction surveys. Already municipal laboratories in several cities are making Wassermann reactions and various hospital laboratories have been so engaged for some time. These laboratories need not stop at the mere examination of specimens sent in, but should be the center for extensive records on various groups of the population. As examples of the possibilities, one can mention examinations of all the members of infected families, such as have recently been reported by Post[15] of Boston; surveys of all admissions to hospitals, jails, almshouses, etc., and in time these examinations can be extended to civil services, to the police and fire departments, to railroad employees and so on. Of course the information gained in this way is only partial and must be interpreted by experienced physicians. A single negative Wassermann reaction, for example, does not rule out syphilis by any means. The results of these surveys will certainly be too low, because the reaction does not pick out 100 per cent. of cases in any stage of the disease. It is also subject to natural fluctuations and is much influenced by treatment and also by the use of alcohol.[16] The results should therefore be supplemented by other methods of examination when possible. It is hardly necessary to say that this sort of work cannot be done without moral and financial support. Equipment is needed and practically one man's whole time must be devoted to the work if any considerable amount of information is to be obtained.

Most of the observations to date have been made on hospital cases, but the observations are already beginning to extend out into the general population. In regard to hospital cases, it has been shown that a large number are syphilitic, while usually entered under some other diagnosis. Thus out of 111 cases admitted to the Children's Hospital in Boston, Lucas[17] found 31 per cent. infected. Churchill,[18] in a hospital in Chicago, found that of 102 children, thirty, or nearly one in three, were infected, although none were admitted for syphilis. In New York, Holt[19] found a much smaller number, 6 per cent. among more acute cases. In Glasgow, Browning[20] reports positive findings in 14 per cent. of children, and a much higher percentage in defective children. In Australia, in a series of 100 obstetric cases in a public hospital, Piper,[21] by the Wassermann reaction, found 16 per cent. infected, and obtained confirmatory clinical evidence in most cases. Among the negro insane in Alabama, of over seven hundred male and female patients, Ivey[22] found 26 per cent. infected; one-half of the infections were latent. These few examples show how this method may be applied to large series of cases under diverse conditions. In regard to the endemic source of infection, Browning has recently found 100 per cent. of infection among 104 prostitutes, and among 109 men, women and children classed as tramps, 100 per cent. of infection.

The Army represents a selected class of the population at an age most exposed to infection. You may have heard something about venereal diseases in the Army and you may have received a false impression about their prevalence. The reason you hear about these diseases is that we have some knowledge about their prevalence among soldiers in contrast to our complete ignorance of the amount of disease in the population from which soldiers are drawn. In the Army the same medical supervision and discipline are used in treating and caring for syphilis that have demonstrated the wonderful value of antityphoid inoculation, and the conditions are favorable for obtaining information. In the Army as a whole the rate for syphilis for 1909 and 1910 was 2.5 per cent. In 1911 an interesting change occurred. The rate rose to 4.5 per cent. During this year the Wassermann reaction was in quite general use and salvarsan was introduced and many latent cases were detected or voluntarily applied for treatment.[23] In 1912 the rate dropped to 2.5 per cent. again. In one regiment of 950 men, Captain Reasoner[24] has made a Wassermann survey and he found forty-eight cases of syphilis, or about 5 per cent. of the command. Twelve cases gave no history of the disease, while eight with a history gave a negative reaction. Captain Reasoner believes 7 per cent. is a conservative estimate of all cases. In another regiment, Captain Bartlett made a careful study covering more than a year and found about 10 per cent. of the command infected. Regiments undoubtedly vary in degree of infection, depending on personnel, place of service, etc., but for the Army as a whole the rate seems to be something over 5 per cent. As we shall see later, this percentage is being reduced. No exact statistics are available as to the amount of syphilis among men coming to recruiting stations. Such information would be of great value from many points of view. We already know that venereal disease is the cause of rejection of more men than any other condition. The question of routine Wassermann reactions on recruits has been considered, but, as this measure would require about thirty thousand reactions a year, it has not yet been feasible. Since the adoption of the test for the Army, however, by Captain Craig and other medical officers, a great many reactions have been made in the Army laboratories on suspects among recruits and in this way many cases of syphilis are excluded from the service. It is probable that in a short time a survey of a

15. Post: Boston Med. and Surg. Jour., 1914, clxx, 113.
16. Craig: Bull. 3, Surgeon General's Office, 1913.
17. Lucas: Boston Med. and Surg. Jour., 1913, clxix, 423.
18. Churchill: Tr. Am. Pediat. Soc., 1912, xxiv, 149.
19. Holt: Am. Jour. Obst., 1913, lxvii, 1228.
20. Browning: Brit. Med. Jour., 1914, i, 77.
21. Piper: Case of Cirrhosis of Liver with Recurring Ascites, Austral Med. Jour., 1913, new series, ii, 916.
22. Ivey: Med. Rec., New York, 1913, lxxv, 712.
23. Surgeon General's Rep., Bull. 3, Surgeon General's Office, 1913, p. 110.
24. Reasoner: Mil. Surgeon, 1910, xxvii, 189.

certain number of men coming to recruiting stations will be available.

Granted that by a Wassermann survey and other records we come to have a fairly accurate knowledge of the prevalence of the disease in a certain group of the population, what is to be done about it? Possibly the first impulse is to ostracize all syphilitics. But of course this move would not solve the problem, even if it were possible; but it is not even possible. Recently, in New York, a policeman was discharged because he had syphilis. He appealed to the courts, and as no effort was made to prove that the disease was acquired by his own misconduct, the court reinstated him with costs.[25] The mere fact that a man has syphilis is evidently not enough to warrant dismissal, but, in view of the nature of the disease, the burden of proof of an innocent infection should be put on the patient and, if this is not forthcoming, he should be penalized by loss of pay for any absence due to this disease. In candidates for various positions, tests for syphilis can be included in the physical examination and the presence of syphilis can be made cause for rejection, as is now the case in several cities. In this way an additional stamp of disapproval can fairly be put on the disease. As was said, however, these repressive measures do not really solve the problem because the disease remains and rejected candidates tend to swell the mass of discontent in society.

TREATMENT

This consideration brings us to the question of treatment, and here we find another field in which city governments and hospitals can do a great deal. The position of most hospitals toward syphilis needs revision. Most hospitals refuse to admit patients suffering from the early symptoms of the disease; the same hospitals welcome patients with aortic insufficiency, aortitis, aneurysm, optic neuritis, locomotor ataxia, etc., and yet these conditions may be just as much syphilis as a chancre or a secondary eruption. In other words, most hospitals admit patients when they get into such shape that little is to be expected from treatment, and they refuse to treat cases at a time when a great deal of good can be done. The attitude of hospitals was perhaps partly justifiable in the past, but with our present means of treating infectious lesions and with the awakened public interest, it would seem that hospitals are not doing their full duty to their clientele unless they make provision for treating the early stages of syphilis.

Scientifically, the most hopeful outcome of all the recent work in syphilis is the possibility of diagnosing the disease in the primary stage and of making an immediate and radical cure by the combination of salvarsan and mercury. Abortive treatment of the disease in the primary stage has been the dream of syphilologists for many years, but nearly all attempts have failed, or, in case of the few so-called successful instances, the diagnosis has been questioned. But with our present sure method of diagnosis by finding *Spirochaeta pallida* and using salvarsan, which is a more specific remedy than we have hitherto possessed, the dream has at last come true and this method of handling syphilis rests on a firm basis. It is something new and revolutionary. The best series of cases I have seen to illustrate this point has been recently reported by Boas[26] from Copenhagen and is summarized in Table 1. The treatment in all cases was practically the same, that is, two intravenous injections of salvarsan and fifty inunctions of 3 gm. of mercury.

TABLE 1.—RESULTS FROM TREATMENT WITH SALVARSAN AND MERCURY

Lesions	Cases	Months Observed	No Relapse	Relapse	Per Cent.
Chancre (Sp. + W. R. —)	30	2 to 25	29	1	3
Chancre (W. R. —)	30	2 to 25	26	4	13
Fresh Secondaries	62	2 to 19	48	14	22

It will be seen that the percentage of relapse rises steadily as the disease goes on. As a control, a number of cases were treated with the same amount of mercury alone, as appears in Table 2.

TABLE 2.—CASES TREATED WITH MERCURY ALONE

Lesions	Cases	Months Observed	No Relapse	Relapse	Per Cent.
Chancre (Sp. + W. R. —)	8	2 to 5	0	8	100
Chancre (W. R. —)	13	1 to 6	0	13	100
Fresh secondaries	72	1 to 51	4	68	94

These cases illustrate the usual failure of mercury to abort the disease, and the four cases out of ninety-three which did not relapse probably passed into the so-called latent stage.

In the Army we have records of similar results. They are not very numerous as yet; partly because we are just beginning to work on a definite plan on a large scale and partly because field service conditions have interfered with continued observation in many cases. But we have had some encouragement and believe that we are on the right track.

The question may arise, Why is it necessary to use mercury at all if salvarsan really is the important factor in the results? The answer is, first, that the results of the combined treatment are better than those obtained by the use of salvarsan alone and, second, that if relapses occur after salvarsan alone, they are apt to be explosive and may do great damage if the nervous system is already infected, while if they occur after mercury, they are more gradual and give more warning.

Yet comparatively few persons receive the benefit of this great opportunity. Venereal sores are still powdered or cauterized and allowed to run on without a definite diagnosis. The same situation which has been so scored in the case of cancer prevails in the handling of syphilitics. Early diagnosis is neglected and radical treatment is substituted by palliation. The diagnosis of syphilis can be made on the first day the disease is noticed, in a few minutes and with no great amount of equipment; but very few dispensaries ever make the attempt. In 1903 Swift published figures collected in New York on eighteen dispensaries which treat these cases. Routine examinations for spirochetes were made in only five; only five had dark-field microscopes, and only five treated cases early.[27] Surely such a situation is indefensible either on scientific or social grounds. There is no question of morality here: the damage has been done and the cases are handled after a fashion—but not *secundum artem*. The attempt

25. Having Syphilis not Conduct Unbecoming an Officer, Medicolegal, THE JOURNAL A. M. A., 1914, lxii, 482.

26. Boas: München. med. Wchnschr., 1913, lx, 2620.

27. Swift: New York Med. Jour., 1913, xcvii, 1012.

to distinguish a syphilitic from a non-syphilitic sore by clinical appearances is in the same class with an attempt to distinguish a fracture and a sprain without the aid of the Roentgen ray. Sometimes the attempt is necessary and it is often successful. But, as a routine matter, why should we guess when we can know? And more important still, why should we lose critical time when we can act immediately? The practice of cauterizing or powdering venereal sores before a positive diagnosis is made is worse than treating a case of fever with quinin before the malarial parasite is found, because if a sore is syphilitic, the treatment not only lessens the chance of finding the spirochetes, but has no effect on the disease. The discharge from all venereal sores should be examined microscopically at the earliest moment before any local treatment is used. Facilities for such an examination should be available in municipal and hospital services.

In our series, over 50 per cent. of venereal sores have been found to be syphilitic and many of these could not be diagnosed by clinical signs or by blood examination. An analysis of these sores shows that the spirochetes were found at a time when the blood was negative on an average of seven days, the spirochetes were present and the blood was positive on an average of eighteen days and the spirochetes were not found but the blood was positive in twenty-four days. These periods mark the general invasion of the body and each day makes radical treatment less certain. We should therefore concentrate our efforts on early diagnosis and radical treatment. No disease offers more encouraging or fascinating work along these lines. No better opportunity to practice scientific medicine exists to-day than the opportunity to pit our skill against the pertinacity of *Spirochaeta pallida*. The requisites are the dark-field microscope and salvarsan and mercury. This armamentarium costs something and no municipality or hospital can expect to have results in this work without paying something for them.

STANDARD OF CURE

The introduction of etiologic tests for the presence of living spirochetes somewhere in the body have altered our whole conception about the efficiency of the treatment of syphilis. Only a few years ago it was taught that mercury was a specific, and the patient was often justly blamed for unsatisfactory results because he did not follow the prescribed course of treatment. But with the introduction of our modern tests we have come to realize that mercury, even when taken in strict accordance with rules, probably cures less than 50 per cent. of cases. The most striking example of the failure of the thorough treatment with mercury is seen in the subsequent development of tabes and paresis, which, as was said, we now know are due to the actual presence of the spirochetes in the brain and cord. But there are other forms of syphilis, especially the vascular form, in which the results are the same. Even with the addition of salvarsan we now recognize that there are many old cases that are practically incurable. This does not mean that the disease cannot be controlled; but it does mean that the spirochetes are still at work and may be transmitted to the next generation.

The question of establishing a standard of cure has been correspondingly simplified by these same etiologic tests. In the Army we believe we have unusual opportunities for following up cases and for observing the results of treatment. Each case of syphilis, therefore, is recorded in a register, in which the treatment and Wassermann results are entered and which follows the patient until cure or discharge. By this means we are gathering a great deal of information. Of course many cases are not followed up as carefully as they might be, but in general the syphilis situation is much better than it has been as a result of these records. Our standard of cure is as follows: One year without treatment, without any suspicious clinical symptoms, with several negative Wassermann reactions and no positive ones and at the end of the year a negative provocative Wassermann reaction or negative luetin test. If a man fulfils all these requirements we consider the case closed. If possible, it would be better to add an examination of the spinal fluid, because in some few cases a local infection of the nervous system is not revealed even by these tests, but for the present we would be satisfied if the other tests were negative in the bulk of patients. The difficulty of attaining this standard is seen in the relatively few cases we have which have fulfilled all the conditions. Thus only about a hundred cases out of several thousand treated have as yet satisfied the requirements, although the number is increasing now that we have a more definite plan of treatment.

If we have had only this partial success in the Army where our patients are under direct control, we cannot expect as much in every-day practice until this practice becomes more definite and systematic. Philip[28] has recently made a study of 1,433 cases infected in four years in Hamburg, and of these 4 per cent. took no treatment, 63 per cent. took only one course and 22 per cent. only two courses, so that a total of 89 per cent. was insufficiently treated. It seems possible that the follow-up system used in the tuberculosis campaign and in social service could be used to advantage in keeping track of patients, and this measure, together with the establishment of night clinics, may aid in handling the situation.

PREVENTION

In preventing the spread of the disease, general hygienic measures are of some slight avail, such as the abolishing of the common drinking-cup and towel, and the avoidance of promiscuous kissing. A classic example of the terrible consequences of a kissing game has been reported by Dr. Schamberg[29] of this city, in which seven girls were infected at a kissing party by a young man. Medical students, too, are in need of instructions in care of handling syphilis because the disease is one of the great occupational diseases for the doctor. Every physician who treats syphilis knows of a number of cases among doctors and dentists who have been infected by handling syphilitics. I have recently had personal care of four such cases. These infections occur chiefly when one does not suspect any danger. In dealing with a known infectious case, the ordinary methods of asepsis and antisepsis are entirely sufficient.

A more effective preventive measure is along the line of negative eugenics, that is, the prevention of the infection of families by the marriage of syphilitics. Whatever controversy there may be about eugenics or of laws on the subject, it is only common sense

28. Philip: München. med. Wchnschr., 1914, lxi, 245.
29. Schamberg, Jay F.: An Epidemic of Chancres of the Lip from Kissing, THE JOURNAL A. M. A., 1911, lvii, 783.

to prevent the marriage of such infected persons. Here the responsibility rests primarily on the physician and on the parents. The standard for marriage in my opinion should be the same as the standard for cure as given above. No doubt either parent may have a local infection in some part of the body which will not involve the offspring. But we have no way to distinguish these cases.

The decisive time and place to apply preventive measures is, of course, after sexual contact with infected persons, and this procedure can be made effective. It has been put on a firm experimental basis by Metchnikoff in the use of 30 per cent. calomel ointment. Probably the best demonstration of its value has been given by the Army and Navy services. The attitude in the service is this: No man has a right to deprive the government of his services and become a burden on the sick report through his own misconduct. He is therefore told that if he exposes himself to infectious diseases he must take measures to prevent becoming infected. Men returning to the garrison are ordered to report at the hospital if they have been exposed to venereal diseases and to receive a prophylactic treatment. This consists of a thorough washing, an irrigation of the urethra with argyrol solution to prevent gonorrhea and an application of 30 per cent. calomel in benzoinated lard to prevent syphilis. If a man develops disease without having used the prophylactic, he is punishable for disobeying orders. And in any case his pay is stopped while he is sick as a result of alcoholism or venereal disease, and it is now proposed in Congress to require him to make good the time lost.

That these measures can be made successful has been definitely demonstrated many times. One of the best illustrations is seen in the results recently obtained by Major Howard at the recruit depot at Jefferson Barracks, where ten thousand recruits are handled a year. In a series of 3,800 exposures, only one case of syphilis developed. Before the method was introduced the ratio of venereal disease was 227 per thousand; after introduction, among those who used the prophylactic, eighteen per thousand. Major Howard[30] says: "The system is entirely practicable as demonstrated by a full year's experience at Jefferson Barracks." Of course there are a great many places where the system may fail; the prophylactic may be used too late or not thoroughly enough. In one case the glans and prepuce were thoroughly disinfected, but the base of the organ was neglected and a chancre developed there. The results vary greatly with the interest of company and medical officers. The results for the whole Army, however, are encouraging. During the last year in which these measures have been used the rate for all venereal disease has fallen from 115 per thousand to eighty-five per thousand; for syphilis from twenty-five to twenty per thousand. It is difficult to say exactly how much weight the loss of pay has in making men more careful, but it seems likely that the prophylactic is the most important factor. The campaign which the Surgeon-General's Office has started on venereal diseases cannot in the nature of things be as successful as our campaign against typhoid fever; but the results are along the same lines. The more clearly it is understood that syphilis is a preventable disease, the fairer it is to penalize those who contract it. In regard to the morality of these measures, we seem to have an excellent precedent in the practice of circumcision. The strongest argument for this practice has always been the one based on prophylaxis of disease. The operation is very commonly practiced and it is one of the rites of the race which has given the world its greatest moral teachers.

A debatable subject might arise if we had any prophylactic vaccine against the disease. But we have none and we have no prospect of any, because of the nature of the disease and lack of any acquired immunity to a second attack. All experimental attempts in this direction have failed. Salvarsan also has not robbed the disease of its terrors as was at first feared in some quarters. In spite of all our advances, syphilis remains as a sign-post for the straight and narrow road.

In conclusion, notwithstanding all the complex questions raised by this disease, let us hope that the labors of Metchnikoff, Schaudinn, Ehrlich, Noguchi and many others have not been in vain, and that science and morality can work together for the common good.

SUMMARY

1. The application of Koch's etiologic method for the study of infectious diseases, to syphilis, has greatly increased our knowledge of the disease during the last ten years.

2. A strictly medical campaign against syphilis is neither practicable nor desirable. A modified medical campaign both practicable and necessary.

3. The prevalence of the disease is still largely a matter of conjecture, and information on this point is to be obtained largely by Wassermann reaction surveys, carried out by municipal and hospital laboratories.

4. The most hopeful outcome of all the recent work on syphilis is the possibility of early diagnosis and radical cure. The possibility is still largely unrealized on account of lack of facilities in dispensaries and hospitals.

5. Our ideas about the efficiency of treatment and about a standard of cure are much more definite than heretofore, as a result of the application of etiologic tests.

6. Syphilis in most cases is a preventable disease, and this fact is an additional warrant for penalizing those who contract it.

30. Howard: Bull. 2, Surgeon General's Office, 1913, p. 42.

CHAPARRO AMARGOSA IN THE TREATMENT OF AMEBIC DYSENTERY

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In recent years much has been written on the treatment of amebic dysentery. Perhaps no subject in all therapeutics has received such a diversified therapy as has this. The fact that so many drugs have been recommended is a potent proof of the efficacy of none of them. Ipecac is the drug that has been most widely used, and recently it has been supplanted by emetin (alkaloid). It is the purpose of this paper to call attention to chaparro amargosa as an amebicide.

My interest in the treatment of dysentery began with a case I saw with Dr. J. W. Nixon of Gonzales, Tex., about two years ago. At his suggestion, chaparro

amargosa was given to the patient with the most happy results. Since this time I have used it in ten cases and am sure that it is the most efficient remedy we have at present for treating amebic dysentery, unless we except emetin.

We are indebted to the Mexicans for the name "chaparro amargosa." It means "bitter bush." It has been a domestic remedy among the Mexicans of Southwest Texas and Mexico for many years. It is said that General Zachary Taylor's soldiers learned its secrets during the Mexican War and profited no little from its use. Botanically, it is classified as *Castela nicholsoni*, Hook, and belongs to the *Simarubaceae*, of which family quassia and simaruba are also members. Putegnat[1] states that "it is hardly to be distinguished from the entire-leaved plants of the *Simarubaceae*," but places it in "the natural order *Ochnaceae*."

The first attempt to bring this remedy before the profession was made by Putegnat[1] of Brownsville, Tex., in 1883. He studied the plant botanically and chemically, recommended it as an antiperiodic and incidentally mentioned that it had been used in cases of diarrhea and dysentery. Nixon[2] of Gonzales, in 1893, emphasized the antidysenteric properties of the drug and established firmly its therapeutic value. He reported three illustrative cases and stated that he had had many others. Knox,[3] one year later, published a personal experience and felt no hesitancy in attributing his recovery to chaparro amargosa. West[4] of Galveston made a preliminary report on seven cases in 1895, using the fluidextract. In his words, "in every case under its use the frequency of the stools has diminished, the tormina and tenesmus subsided, the blood, mucus and ameba disappeared from the dejections. The patients left the hospital apparently cured after three or four weeks of treatment." Crittenden,[5] the following year, cured a case of intractable dysentery of three years' standing by using fluidextract of chaparro amargosa. From 1896 to 1903 the literature to which I have access is surprisingly free from anything on this subject. Indeed, the articles which I have named are all that can be found. It is not mentioned in the *Index-Catalogue of the Surgeon-General's Library*, and there is no reference to it in the *Index Medicus*.

Chaparro amargosa is a small thorny bush, which is indigenous to Southwest Texas and Northern Mexico, growing on thin, rocky mesquite or post-oak land and having an especial tendency to be found on small, rocky hills. It grows to be a bush 2 or 3 feet in height, its size depending on the comparative richness of the soil on which it is found. Its leaves are small and lanceolate, its flowers pink and very small. The matured fruit is a red berry which is about the size of a pea.

All parts of the plant, from the root to the berry, possess the characteristic bitter taste and medicinal properties. It is on the market as a fluidextract, the dose being from 1 to 3 fluidrams before meals. My experience has been confined principally to the use of the infusion, which is prepared by boiling the plant — roots, branches, foliage and fruit — in water for from thirty to sixty minutes. No definite weight can be used, as the weight of the plant will vary with the seasons and with its dryness. The infusion should have the color of moderately weak tea.

My routine treatment is as follows: The patient is kept in bed if practicable; the diet is restricted to liquids and semisolid articles; an ounce of magnesium sulphate is given three or four hours before treatment is begun and repeated every two or three days; 6 or 8 ounces of the infusion are given by mouth half an hour before each meal and at bedtime; rectal enemas of from 500 to 2,000 c.c. of the infusion are given in the knee-chest posture twice daily, and the patient is instructed to maintain this position for five or ten minutes, and afterward to retain the solution as long as possible. The length of time the fluid will be retained varies with the irritability of the rectum and the persistence of the patient; in some it will be only a few minutes, while others will be able to retain it indefinitely. If the large bowel contains fecal matter it is well to irrigate it with normal saline preliminary to giving the enemas. It is advisable to continue the treatment for a week or two after the subsidence of all symptoms.

The infusion as well as the fluidextract has an intensely bitter taste, but it is a "clean bitter," and no difficulty is experienced by patients in taking it. The bitter taste is easily overcome by eating a piece of bread or drinking a little coffee if necessary. As a matter of fact, the bitter taste is not undesirable, because of its tonic and stomachic effect. No nausea or other untoward symptoms have followed the administration of this drug and so far as is determined it exerts no detrimental influence on the human organism, even in large doses.

The active principle of chaparro amargosa has not been satisfactorily isolated. Putegnat[1] extracted an amorphous bitter principle to which he gave the name "amargosin"; but his work has not been confirmed. Tannin is not responsible for the action of the drug, as the detannated fluidextract is no less potent than the original fluidextract. Probably the therapeutic action depends on an alkaloid or a glucosid and this, when once isolated, may possibly be administered hypodermically.

I give the results of a few experimental observations to show the amebicidal action of chaparro amargosa: Under the microscope, 1:10,000 dilution of the detannated fluidextract at body temperature caused all *Entamoebae histolyticae* to cease moving instantly and to assume a spherical shape with sharp differentiation of ectoplasm and endoplasm; 1:100,000 dilution required from thirty to sixty seconds to accomplish the same result, and 1:1,000,000 from one to three minutes.

This drug is not indicated in ordinary diarrhea and is probably without action in other parasitic intestinal infections. One case of *Strongyloides intestinalis*, one of *Balantidium coli* and three of *Cercomonas intestinalis* were uninfluenced by it. One case of the last-named was apparently cured; this patient gave a history typical of amebic dysentery; but as no amebas could be found, it was not so classified.

This communication is based on the treatment of ten cases. Part of these were seen with other physicians, to whom I know take the opportunity to express my indebtedness.

1. Putegnat, J. L., Jr.: Castela Nicholsoni; Its Characteristics and Proximate Analysis, New Remedies, New York, 1883, xii, p. 102.
2. Nixon, J. W.: Chaparro Amargosa: A New Treatment for Dysentery, Texas Sanitarian, August, 1893.
3. Knox, R. T.: Chaparro Amargosa: A New Treatment for Dysentery, Texas Med. Jour., November, 1894.
4. West, H. A.: Discussion of paper by Ashton, Tr. State Med. Assn. of Texas, Galveston, 1895, p. 124.
5. Crittenden, W. I.: Chaparro Amargosa in the Treatment of Chronic Dysentery, Virginia Med. Jour., June, 1896.

REPORT OF CASES

CASE 1.—*History.*—O. V., farmer, aged 43, first seen Oct. 6, 1911, was having the first attack. The onset occurred two months previously with frequent and bloody movements and pain in the abdomen. The patient was in bed for three weeks. The symptoms decreased for three weeks, but became troublesome ten days before the patient was seen, when there were six or eight bloody stools a day, tenesmus and pain in the rectum. The appetite was poor, and there was nausea but no vomiting. The patient had lost 40 pounds in weight. He had taken various medicines without effect.

Physical Examination.—The patient looks ill; he is very anemic. The temperature is 100, the pulse 96. The general examination is negative. Proctoscopic examination is negative except for slight congestion of the rectal mucosa. The stools are mostly blood and mucus and have a characteristic "flesh-like" odor. Many characteristic *Entamoebae histolyticae* are present.

Treatment and Course.—The day after treatment was begun, the patient felt much better and had only one movement, which contained mucus but no blood. There were no living amebas. One clump of what appeared to be dead amebas was seen. At the end of a week the patient went home free from all symptoms. There had been no recurrence two years later.

CASE 2.—H. L. R., farmer, aged 55, first seen Nov. 13, 1911, was having the second attack. The first attack lasted four months. The present trouble had continued three months, with from two to twelve bowel movements a day. There were extreme abdominal pain and rectal tenesmus. The patient had lost 20 pounds in weight. The symptoms were not affected by silver nitrate irrigations or starch and laudanum enemas.

Physical Examination.—The patient is very thin and anemic. The temperature is 99, the pulse 84. The general examination is negative. In the left iliac fossa one can feel the sigmoid as a tender elongated mass. No ulcers can be seen in the rectum. The stools are semisolid, yellow and flecked with blood and mucus. Moderate numbers of motile *Entamoebae histolyticae* are seen.

Treatment and Course.—This man was sent to the hospital where he spent a very restless night; ½ grain of morphin hypodermically was necessary to control the pain. He threatened to go home unless something was done. Chaparro amargosa was begun the following morning and by evening he felt much easier and slept all night. There were no stools until the second day, and then no living organisms could be found. On the morning of the second day the patient was found smoking a cigarette and said that he felt better than he had for months. He went home at the end of a week, feeling well and having gained 5 pounds. A letter four months later stated that he had gained 26 pounds in weight and that he was free from all symptoms. There had been no return two years later.

CASE 3.—D. F., aged 45, a refugee from Mexico, first seen Dec. 6, 1911, had had four attacks of dysentery in the past year, each attack lasting three or four weeks. The symptoms were eight or ten bloody stools a day, pain in the abdomen, tenesmus and loss of 10 pounds. Injections of linseed oil, ichthyol and silver nitrate, and medicines by mouth had not modified the symptoms.

Physical Examination.—The patient is rather pale and thin, and there is slight general abdominal tenderness. The temperature is 98.6, the pulse 90. The stools are almost pure mucus, flecked here and there with blood. Many blood- and pus-cells and many motile *Entamoebae histolyticae* are found.

Course and Treatment.—The patient was treated with chaparro amargosa by mouth and by rectum. He did not have a single bowel movement except when the injected fluid was expelled or when Epsom salt was taken. No blood or mucus was seen and no amebas could be found. The patient was feeling well and the appetite was fine. He reported two weeks later and I considered him well. This patient is at present a member of President Huerta's cabinet, and even under such exciting circumstances has not succeeded in precipitating a return of his dysentery.

CASE 4.—A. R., boy, aged 9, was first seen Dec. 24, 1911, during the first attack. There were abdominal pain, tenesmus, blood and mucus in the stools, and there had been from two to four movements a day at intervals for six weeks. Paregoric and salts by mouth and ice-water enemas had alleviated but not cured the condition.

Physical Examination.—The general examination is negative. The stools are semisolid, containing blood and mucus; there is a characteristic foul odor; microscopically, blood- and pus-cells and *Entamoebae histolyticae* are detected in large numbers.

Treatment and Course.—Routine treatment was given. Injections were retained from half an hour to two hours. No bowel movement occurred except when the fluid was expelled. Blood and mucus disappeared at once and no living amebas could be found after the first treatment. The child gained 4 pounds in a few weeks and has remained perfectly well up to the present time.

CASE 5.—Mrs. E. M. H., aged 62, first seen April 15, 1912, had shown symptoms of diabetes for several years and had had eight previous attacks of dysentery in the past three years, lasting from one to three weeks. There had been very acute symptoms for ten days; from ten to twenty bloody movements a day, tenesmus, abdominal pain and nausea.

Physical Examination.—The patient is acutely ill. The temperature is 101.6, the pulse 120. The urine contains sugar and acetone. The stools are almost pure mucus and pus, flecked with blood. Many amebas are found.

Treatment and Course.—The patient improved steadily from the first treatment. The bowels moved five times the first day, three times the second and only once on the succeeding day. The temperature came down to normal following the first treatment and remained normal. At the end of a week the patient was up and about and felt well, though there continued to be sugar in the urine.

CASE 6.—A. R., Mexican, man, aged 29, first seen June 24, 1912, had had symptoms of dysentery for two years, with only one intermission of three weeks. There had been from six to twenty bloody stools a day and the patient had lost 30 pounds.

Physical Examination.—The general examination is negative except for slight tenderness in the sigmoid region. The stools are semisolid and contain much mucus. A moderate number of *Entamoebae histolyticae* and a few *Cercomonades intestinales* are found.

Treatment and Course.—This patient went home and used the treatment himself. He returned in two weeks and reported that his recovery had been rapid and complete. There has been no recurrence.

CASE 7.—A. L., Mexican, man, aged 22, first seen June 24, 1912, had had acute bowel symptoms for three weeks. The appetite was poor, there had been nausea, vomiting, from six to twenty movements a day, severe intestinal pain and tenesmus, and blood and mucus were present in the stools. The patient suffered great weakness and had lost 20 pounds in weight. Bismuth and the usual antidiarrheal remedies had done no good.

Physical Examination.—This reveals an anemic, undernourished man. There is slight general abdominal tenderness. The stools are of fluid consistency, containing much blood and mucus. There are a moderate number of active *Entamoebae histolyticae.*

Treatment and Course. The patient greatly improved after the first treatment. There were no bowel movements till salts were taken. No motile organisms could be found. The patient improved steadily. He gained 2½ pounds in five days and had no further symptoms. He remained well for three months, when he was lost sight of.

CASE 8.—B. H., negro, man, aged 24, first seen March 3, 1913, had had symptoms for six weeks; from six to fifteen bloody stools a day, pain in the abdomen, poor appetite, malaise, fever and loss of 5 pounds in weight. He had obtained no relief from the usual remedies.

Physical Examination.—The general examination is negative. A small stool passed in the office contains much blood and mucus; a few characteristic *Entamoebae histolyticae* and a few *Cercomonades intestinales* are found.

Treatment and Course.—The patient was begun on 2 drams of the detannated fluidextract of chaparro amargosa before

each meal, and he did not have a single dysenteric stool afterward. He was seen ten months later and felt as well as ever. No amebas or *Cercomonades intestinales* were found in the stool.

CASE 9.—W. C. N., merchant, aged 46, was first seen June 4, 1913. Onset had occurred four years before. He had slight dysenteric symptoms at Pleasanton, Tex., for three or four months. He went to Mexico and there became acutely ill. There were from five to twenty bloody stools in twenty-four hours, high fever, sharp abdominal pain and tenesmus. He lost 35 pounds in weight. He was brought on a stretcher to El Paso, where he stayed in a hospital three months and received all sorts of treatment, including ipecac. He improved but was not cured. He had continued to have recurring attacks of dysentery which were liable to follow work or overeating. The stools were never free from mucus. When seen, the patient had from five to ten bloody stools a day.

Physical Examination.—The patient is sparely nourished; the complexion is sallow; the mucous membranes pale. The general examination is negative except that the sigmoid is palpable as a firm tender mass. The stools are yellow, liquid and contain no blood or pus. A moderate number of very active *Entamoebae histolyticae* are found.

Treatment and Course.—Chaparro amargosa was given by mouth and by rectum. This was followed by immediate improvement; there was one formed movement the first day and one the second; there was no pain in the abdomen. Only one active ameba seen after treatment was begun. The patient says that for the first time in months he does not "have to run" when he rises in the morning. Treatment was continued for two weeks. At the end of a month he felt fine and had gained 8 pounds in weight. The bowels were moving once daily. No amebas could be found in the stools and there has been no recurrence.

CASE 10.—W. G. L., a carpenter, aged 52, first seen Jan. 6, 1914, reported the onset as having occurred eighteen months ago with acute symptoms which lasted two months. There had been from twenty to twenty-five bloody movements a day, very severe abdominal pain and tenesmus, fever, nausea, general malaise and weakness. Since this time he had never been free from symptoms, though at times he had been somewhat better. He had not had a normal stool since the onset. When seen he was having from ten to fifteen bloody stools a day; there had been fifteen stools the day before. He had lost from 20 to 30 pounds weight. The patient felt very weak and was troubled much with palpitation of the heart.

Physical Examination.—The patient looks sick. The tongue is coated and the mucous membranes are very pale. The temperature is 98.6; the pulse 90. Hemoglobin is 50 per cent. The abdomen is slightly distended and tender over all. The sigmoid is markedly thickened and tender. A stool passed in the office is almost pure blood and mucus, containing a great many active *Entamoebae histolyticae*.

Treatment and Course.—One liter of the infusion of chaparro amargosa was given by rectum each morning and 8 ounces by mouth before meals and at bedtime. The bowels moved three times the first day and once each day subsequently, and this after 1½ ounces of Epsom salt on the first day. All pain and tenesmus ceased after the first treatment. A small, semisolid yellow stool passed the morning of the second day was free from blood macroscopically and microscopically, and no amebas could be found in it. All symptoms including palpitation, ceased from the very first. The patient gained 3 pounds in two days and was able to go to work on the fifth day—something he had not been able to do for eighteen months.

SUMMARY

This is a report of ten cases of undoubted amebic dysentery of from three weeks' to four years' standing. Nine patients were given the infusion of chaparro amargosa and one, the detannated fluidextract; all were cured and there has been no recurrence so far as can be determined, the period of freedom from symptoms ranging from ten months to two years, omitting the last case; in only one case was a living ameba found in the stools after treatment was begun; these cases averaged less than two days before the stools became normal; there were no liver abscesses or other complications; experimental data prove the amebicidal action of chaparro amargosa no less surely than do the clinical results, the drug undoubtedly having an elective affinity for the protoplasm of *Entamoeba histolytica*.

EXPERIENCE WITH CROTALIN AT THE OAKBOURNE EPILEPTIC COLONY*

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The treatment of epilepsy by the injection of rattlesnake venom has attracted some attention. Those of us who are connected with the Pennsylvania Epileptic Hospital and Colony Farm have been besieged by inquiries as to its value. Information was sought in person and by telephone, and letters were received from different parts of the country. The glowing reports heralded throughout the land in the lay press reached our patients and their families, some of whom almost insisted on our using crotalin. The matter became somewhat troublesome and, since we were without personal knowledge on the subject, there seemed sufficient reason for our giving the venom a trial.

Observations on epileptics made under colony supervision should be useful, since the life there is the most regular and healthful possible. Patients are not left to report on their own condition—a method of gathering information which may be most unreliable. Attacks often occur while patients are asleep, and frequently there are manifestations during the day of which these persons are unaware. Again, seizures may prevent them from reporting regularly to the physician. These conditions and others detract from the value of the work when the patients are not kept under close observation.

For the purpose of this study a fair group of patients having idiopathic epilepsy was selected for three months' treatment. Afterward came the work of leveling up to determine as nearly as possible just what effect crotalin had on these patients. This was a difficult problem, and a few words parenthetically may not be out of place.

Epilepsy is perhaps the most peculiar disease known. Aside from their epileptic phenomena and characteristic temperament, some of these patients are in moderately good physical condition. All paroxysms may cease for a time without known cause and in very rare instances a spontaneous cure has occurred. An acute illness usually holds the seizures in abeyance, and pregnancy occasionally does the same. Some epileptics have attacks only when asleep, and there are a few whose disease is never suspected. Seizures may be so mild as scarcely to be observed even while the patient is watched, or status epilepticus may supervene at any time, and this condition is often fatal by the third attack. About one out of ten epileptics has frequent insane episodes which occur precipitately, and there is no more dangerous form of insanity. Self-consciousness may be lost suddenly,

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and in this state of automatism the worst of crimes have been committed without the subsequent knowledge of the patient. When in such a condition the subject is no more responsible for his actions than we are for our dreams.

There is a great deal more to epilepsy than fits; indeed, the cardinal symptom of epilepsy is the disturbance of consciousness and not the motor manifestation.

In a series of cases no course of treatment has been highly gratifying, and sometimes disappointment comes when it is least expected. A patient now under observation is a case in point. She is a 14-year-old schoolgirl at our colony, and was having on an average twenty-five seizures a month. Under active thyroid treatment she made decided improvement in every respect, and for six months was without attacks. Of course we thought we were on the right track. And then, without known cause, she began with a few isolated attacks and a little later suddenly broke into a series of 142 seizures which were by far the worst she has ever experienced.

Our observations were made on six patients who had idiopathic epilepsy. All but one were given an intramuscular injection of crotalin once a week for three months. We began with $^1/_{200}$ grain, and the amount was gradually increased to the strength mentioned in each case.

A distinct psychic influence is often observed in the treatment of epileptics, and in view of this the purpose of the injections was kept as much as possible from the knowledge of the patient.

Case 1.—A. P., a Hebrew girl aged 16, had been a resident of the colony for two years. Her attacks began at 8 years of age without obvious cause. She was one of the best pupils in our school, but still was just a shade below the average girl in mentality. The seizures were both major and minor. She had never had status epilepticus, nor had there ever been an insane episode. When treatment was begun her attacks were about as frequent as at the time of admission. The injections were gradually increased to 1/50 grain. This girl always had an irritable disposition; she improved somewhat in this respect. For the year previous to treatment she had an average of eighteen attacks a month and during treatment there was an average of seventy-nine seizures a month.

Case 2.—J. C., a boy aged 16, had been a resident of the colony for four and a half years. His attacks began in infancy without known cause. The clinical history of this patient showed two attacks of status epilepticus which were followed by stupor for about four weeks. He was feeble-minded. For the year previous to treatment there had been an average of twenty seizures per month. After treatment for a month his attacks began to increase in number, and then status obtruded itself and this was followed by a stuporous state which persisted throughout the treatment. The final injection was 1/40 grain. The status was somewhat confusing but so far as we could determine, this patient was uninfluenced by treatment.

Case 3.—L. M., a woman aged 34, had been a resident of the colony for three years. Her attacks had begun fifteen years ago and were about as frequent as at the time of admission. She was feeble-minded. The final injection was 1/50 grain. For the year previous to treatment her attacks occurred twelve times a month and during treatment there were about thirteen a month. This patient was apparently uninfluenced by treatment.

Case 4.—E. M., a woman aged 32, single, had been a resident of the colony for nine years. The first attack occurred at 19 years of age just after the death of her mother. The attacks were both major and minor and at the time of admission were occurring about five times a day. Occasionally the seizures were in series. The intelligence of this patient is that of the average epileptic. She has always showed some mental depression and has suffered frequently from headache. At one time she was placed for three months on a drug prominent in the armamentarium of the epileptologist, and made very decided temporary improvement. During the last month of this period she had only four very light attacks; she was mentally alert and showed less depression than at any time during her residence at the colony. Unfortunately she, like so many others, relapsed. It was thought that this patient might prove responsive temporarily to crotalin also, but an unusual condition developed. After the first injection her arm became intensely swollen, much more so than those of the other patients. For the week following she had twenty attacks. The second injection, which was 1/120 grain, gave rise to more marked local reaction and for the ensuing week there were fifteen attacks. The third injection was 1/125 grain, and the local disturbance resulting was most intense. During the following week there were twenty-two seizures and these were more severe than any that had occurred during the patient's nine years' residence in the colony. In addition to the cellulitis there was prostration, extreme mental depression, loss of appetite and nausea; she had constant and severe headache. Because of these symptoms the injection for the following week was omitted, when her condition promptly improved and she had only twelve minor attacks. A week later, 1/100 grain was given, and ten attacks were recorded with a return of all the toxic symptoms. Another injection was tried the next week, with the result that fifteen severe convulsions followed and the toxic symptoms which ensued were so severe as to cause us to feel that further trial was unjustified.

Case 5.—C. A., a man aged 35, a clerk, had been a resident of the colony for seven years and was usefully employed there. He was married at 27 years of age and his first seizure occurred four months later. Epilepsy developing at that age is sometimes on a syphilitic basis. The ophthalmologic examination by Dr. H. Maxwell Langdon, the Wassermann test by Dr. Corson-White and the absence of luetic neurologic findings all spoke against syphilis. Some years before there had been an insane episode of two days' duration. This patient's mental condition was better than that of any other of the adult colonists. He was considered a good subject for treatment because of his preserved mentality, and beside he was exceedingly desirous and we may say almost insistent in treatment. He had come to the city and consulted a physician and would have left us to take the crotalin treatment had he had the money to do so. Attacks for the year previous to treatment were about as frequent as at the time of admission and amounted to three severe seizures a month occurring in series. The final injection was 1/25 grain. During the treatment he had an average of five attacks a month, he was exceedingly irritable and quarrelsome and his memory was somewhat impaired. He realized that he was worse than before and asked that the treatment be discontinued.

Case 6.—The family of this patient was exceedingly anxious that the treatment be given. J. C., a man aged 23, single, had been a resident of the colony for one year and three months. His attacks began at 9 years of age without known cause. His clinical history showed that he had had a few brief periods of mental aberration. The last injection given was 1/25 grain. Previous to treatment there were on an average of thirteen attacks a month, and during treatment there were twelve attacks a month; but in the midst of the course he had an insane period of three weeks' duration during which time he was free from seizures. His subsequent history included three insane periods of short duration and three series of major epileptic attacks. The last series occurred two and a half months after treatment had stopped. During the last series, which was of two days' duration, sixty convulsions occurred and then he died.

Briefly stated, our experience with crotalin in the treatment of six cases of idiopathic epilepsy was this: Two patients were uninfluenced; two were worse during the treatment; one, early in the course developed

such intolerant toxic symptoms that further experimentation was unjustified, and the last patient died two and a half months after treatment. While we did not feel that death resulted from the use of crotalin, the patient's disease certainly was not benefited by the treatment.

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THE NORMAL AND PATHOLOGIC PHYSIOLOGY OF THE VISCERAL NERVOUS SYSTEM

WITH ESPECIAL REFERENCE TO VAGOTONY AND SYMPATHICOTONY: A REVIEW *

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SAN FRANCISCO

If one contemplates the contemporaneous literature, one is greatly impressed with the volume of work which is being done on the sympathetic nervous system.

It was Langley who, in the latter part of the nineteenth century, first called our attention to a more correct notion of the autonomic nervous system. He showed that the conception then current—that the sympathetic nervous system served wholly as a nerve pathway through which the so-called sympathetic actions of distant organs were affected and that it did not, as Bell taught, arise from the brain by branches connected with the fifth and sixth cranial nerves—was wrong. His views in the main are those of the present-day conception.

ANATOMY AND PHYSIOLOGY OF THE VISCERAL NERVOUS SYSTEM

The autonomic nervous system, better termed the vegetative nervous system, is that system of efferent fibers arising from the sympathetic and related ganglia which supplies the organs of involuntary processes of the body and possesses a certain independence of the central nervous system. Its anatomy is too well known to be given here in detail. Briefly, it includes some of the cranial and sacral nerves and the sympathetic system proper. The latter is composed of a chain of ganglia lying on each side of the vertebral column. One ganglion, as a rule, is present to each spinal nerve-root. In the cervical region only two ganglia are found, namely the superior and the inferior cervical ganglia. These are united by the cervical sympathetic trunk. The upper three to four thoracic ganglia are condensed to form the stellate ganglion. At the bottom of the chain only one coccygeal ganglion is found for the coccygeal vertebrae. All these constitute the first system or the "lateral ganglia."

The second system of ganglia in the abdomen, called the "collateral ganglia," has a special connection with the abdominal viscera and includes the semilunar or solar ganglion, and the superior and inferior mesenteric ganglia.

The third system of ganglion cells, called the "terminal ganglia," including Auerbach's, Meissner's and the cardiac plexuses, is found in the viscera themselves. These have, as a rule, no connection with the fibers of the sympathetic system, but lie on the course of impulses descending by other nerves of the vegetative system, for example, the vagus or pelvic visceral nerves. This system is capable of some independence of the other nervous systems.

The sympathetic ganglia are connected with the spinal nerves just after they have given off their posterior divisions by means of rami communicantes, which are of two kinds: (1) white rami, consisting of small medullated fibers, and (2) gray rami, almost exclusively non-medullated fibers. The white rami are formed by fibers which have their origin in the spinal cord and perhaps in the posterior root ganglion. The gray rami represent fibers which, arising in the sympathetic ganglia, run back to join the spinal nerves.

The outflow represented by the white rami is limited from the first thoracic to the third or fourth lumbar nerve-roots; whereas gray rami pass from the sympathetic to all spinal nerve-roots. Thus it has been shown by experiment that stimulation of a limited number of white rami produces all the effects that can be evoked by stimulation of the gray rami, showing that impulses leaving the cord pass upward and downward in the sympathetic system and are broken somewhere in their course, being transferred to a fresh relay which, by means of non-medullated nerves, carries them on to their destination.

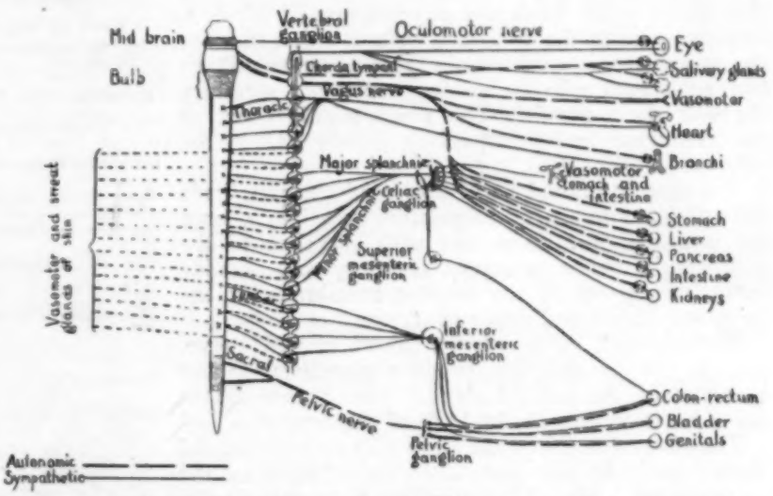

Diagram of the anatomic relations of the autonomic and sympathetic systems (from Meyer and Gottlieb, Experimentelle Pharmakologie, 1911, p. 128).

Langley, therefore, has shown that each fiber of the sympathetic nervous system can be regarded as being made up of two sections: (1) preganglionic fiber, which is medullated, arises in the central nervous system and passes down to a ganglion, and (2) post-ganglionic fiber, usually non-medullated, which arises from the ganglion and continues to its peripheral distribution.

Some authors state that between the muscle or gland and the nerve terminal an intervening substance

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(myoneural, adenoneural) is present, in which the ions of the various elements exert their specific action.

Besides the main sympathetic nerves derived from the spinal cord region, certain cranial and spinal nerves, namely, the third, fifth, seventh, ninth and tenth cranial nerves and the nervi erigentes from the sacral region of the spinal cord, have visceral fibers belonging to the vegetative nervous system, not directly connected with the sympathetic or the central nervous system. Those visceral fibers connected with the cranial nerves are termed the cranial autonomic nervous system, those in the sacral region, the sacral autonomic nervous system, the whole constituting the autonomic nervous system, sometimes termed the vagal system.

The visceral fibers of the third cranial nerve are called the midbrain autonomics. These pass as preganglionic fibers to the ciliary ganglion in the orbit, where they end. The postganglionic fibers from this ganglion form the short ciliary nerves which innervate the sphincter pupillae and ciliary muscles.

The visceral fibers connected with the other cranial nerves constitute the hindbrain autonomics.

The visceral fibers of the seventh cranial nerve arise from the medulla and intermediate nerve of Wrisberg (which is practically the anterior continuation of the ninth, tenth and eleventh cranial nerves), and give rise to the chorda tympani, which supplies the vasodilator nerves to the tongue, submaxillary and sublingual glands besides supplying secretory fibers to these glands. The preganglionic fibers to the sublingual and submaxillary glands end in the submaxillary ganglion.

The seventh cranial nerve also sends preganglionic visceral fibers to the sphenopalatine ganglion, whence the postganglionic fibers run with branches of the fifth cranial nerve to supply secretory and possibly vasodilator fibers to the mucous membrane of the nose, soft palate and upper pharynx.

The visceral fibers of the ninth cranial nerve, namely, the otic ganglion, produce vasodilatation and secretion of the parotid gland. Also a few dilator fibers go to vessels at the back of the tongue.

The visceral fibers of the tenth and eleventh cranial nerves arise in the same column of cells as the seventh and ninth. Most of these fibers run in the vagus, and include motor fibers to the esophagus, stomach and small intestines as far as the ileocolic sphincter and inhibitory fibers to the heart and smooth muscle of the bronchial and gastric glands. The preganglionic fibers end in the jugular ganglia. (It has been shown that the ganglia of the trunk of the vagus is probably the cell station for afferent fibers in this nerve.)

The nervus erigens contains all the pelvic visceral fibers and is connected with the ganglia lying in the hypogastric plexus. It has the following functions:

1. Dilator to the vessels of the penis.
2. Motor to the bladder, colon and rectum.
3. Inhibitory to the sphincter of the bladder.
4. Inhibitory to the retractor penis.

The afferent fibers of the visceral nerves probably arise from the cells of the posterior spinal ganglia.

In general it may be said, according to Langley, that the supply of afferent fibers of the viscera is very small in proportion to that of the outer surface of the body. For example, in the hypogastric nerve and also in the splanchnics, only about one-tenth of the medullated fibers are afferent. In the mouth, anus, lung and bladder, where both somatic and visceral innervation are represented, the afferent visceral supply becomes much greater in proportion; for instance, the pelvic visceral nerve contains about one-third afferent fibers.

Notwithstanding their afferent nerve-supply, ordinary stimulation of the viscera, such as handling, etc., produces no sensation of pain to the patient; but pathologic stimulation, such as stretching, compression and other effects of disease, is productive of pain which, as Head and Mackenzie have shown, is not referred to the diseased viscus, but is referred to certain parts of the cutaneous surface, hypersensitiveness of which localizes in large measure the position of the diseased viscus.

In describing the visceral fibers coursing with certain cranial nerves, the functions of these fibers was hinted at. The fibers of the vegetative nervous system, it may be stated generally, are not equivalent in their functions; for example, the heart-beat is quickened by stimulation of the accelerators (sympathetic) and slowed by stimulation of the vagi (autonomic). Again, the functions of the vagus for the greater part

TABLE 1.—EFFECTS OF ELECTRIC STIMULATION

Nerve or Region Stimulated	Result
Oculomotor nerve (autonomics) (Midbrain)	Pupillary contraction. Accommodation spasm.
Sympathetic (in the neck)	Pupillary dilatation.
Vagus (autonomics)	Slowing of heart or stoppage of heart.
Accelerators (sympathetic) of heart.	Quickening of heart-beat.
Sympathetics	Arrest of secretion of salivary glands.
Autonomics (chorda tympani)	Salivation.
Sympathetic (sphanchnics)	Decrease in tonus of stomach and intestines. Increased secretion of gastric juice.
Autonomics (vagus)	Increase in tonus of stomach and intestines. Decrease in secretion of gastric juice.
Sympathetic	Relaxation of detrusor of bladder.
Autonomics (pelvic visceral nerve).	Contraction of detrusor of bladder.

of the gastro-intestinal canal are motor, while those of the splanchnics (sympathetic) are inhibitory. These two examples not only show that the functions of the two sets of visceral fibers are antagonistic to each other, but they also cite what is true for most of the viscera: that generally the viscera are innervated by both the craniosacral (autonomic) nervous system and also by the sympathetic nervous system with functions reciprocal to each other. The functions, moreover, of any one set of fibers for a given viscus are not always sharply outlined; for instance, the colonic branches of the superior mesenteric ganglion are motor (constrictor) for the blood-vessels and inhibitory for the muscular walls of the colon; also the sympathetic, being inhibitory to the intestines generally, is also motor to the ileocolic sphincter, and sends both motor and inhibitory fibers to the bladder. Again, the nervi erigentes are not only dilator to the vessels of the penis and motor to the colon, bladder and rectum, but inhibitory to the sphincter of the bladder and to the retractor penis.

The adequate stimuli capable of producing effects through the visceral nervous system may be summed up under the following captions:

1. Electric stimuli.
2. Mechanical stimuli.
3. Chemical stimuli, including those of:
   A. Exogenous origin.
   B. Endogenous origin: (*a*) hormones, (*b*) internal secretions, (*c*) toxins, etc.
4. Emotions (probably ultimately chemical).

1. The effects of electric stimulation are given in Table 1.

2. Mechanical stimulation of the same nerves causes in general the same effects as produced by electric stimulation.

3. Chemical substances, whether exogenous or endogenous, are found to exert their influence on the vegetative nervous system, sometimes affecting one system exclusively, sometimes another, and sometimes both.

A. Exogenous chemicals:

1. Nicotin interrupts conduction at the junction (synapse) of the preganglionic and postganglionic fibers of both the autonomic and sympathetic systems.

2. Pilocarpin, muscarin and physostigmin and digitalis stimulate the vagus system (autonomics) and are therefore called vagotropic or vagotonic drugs. The signs produced by these drugs are similar to those produced by electrical stimulation of the autonomics, namely, myosis, bradycardia, salivation, etc.

3. Atropin, scopolamin and other products of the belladonna series produce their effects by paralysis of the terminals of the vagus system (autonomics), especially the cranial autonomics, and are termed vagoparalytic drugs. The well-known effects of administration of these drugs—for instance, mydriasis, dry mouth, tachycardia, etc.—are very similar to the effects produced by stimulation of the sympathetic.

4. Picrotoxin has been shown to stimulate the preganglionic fibers of the autonomic system (vagus system).

5. Ergotoxin has a paralytic effect on the terminals of some of the sympathetic fibers (sympatheticoparalytic), and can be compared to the effects of atropin, etc., on the autonomic terminals.

6. Cocain stimulates all the sympathetic fiber terminals, producing mydriasis and exophthalmos; the effects of cocain are not produced after degeneration of the sympathetic fibers. It has also been shown that cocain sensitizes the sympathetic fibers to epinephrin (which see), and that so-called cocain poisoning is not really the effects of cocain, but rather an epinephrin effect.

B. Endogenous chemicals, hormones, toxins, etc.

7. Epinephrin stimulates the sympathetic system only at the terminal of the postganglionic fibers. It is sympathicotropic or better, sympathicotonic in action, and its effects are similar to those produced by electric stimulation of the sympathetic system.

8. Iodothyrin stimulates the sympathetic, especially in the cervical and thoracic regions.

9. Pituitrin causes vasoconstriction other than renal, and also produces contractions of the bladder and uterus.

10. Cholin (extracted from the cortex of suprarenal glands) produces results similar to pilocarpin, that is, vagotonic.

11. Recently Voegtlin and Macht isolated from the cortex of the suprarenal bodies a sympathicotonic substance whose effects were longer lasting than those of epinephrin.

12. The internal secretion of the pancreas favors inhibition of the sympathetic and is antagonistic to epinephrin, that is, vagotonic.

Many other less important substances could be included in this list, but we can at once see that electric stimuli and certain chemical stimuli are identical in their effects for a given set of fibers, and also that when organs are doubly innervated a certain effect can be produced by either the stimulation of one set (for instance, the sympathetic), or by paralysis of the other (that is, the vagus). Again it might be well to cite an example of this: a dilated pupil could be produced by paralysis of the vagus system or by stimulation of the sympathetic system in the neck (both of which conditions could, as stated above, be produced by chemicals).

Epitomizing the effects of chemical stimulation on the vegetative nervous system, we can make the classification given in Table 2.

4. Cannon and de la Paz have shown that psychic excitement and fright are associated with stimulation of the vegetative nervous system and are capable of producing: (1) sympathicotonic effects such as pallor, mydriasis, tachycardia, and (2) vagotonic effects such as epiphora, sweating, etc.

Grouping all the foregoing effectual methods of stimulation of the vegetative nervous system together, it can readily be seen that the effects of various stimuli to the autonomic system (vagus system), and to the sympathetic system are in general specific and reciprocal.

SIGNS OF VEGETATIVE NERVOUS SYSTEM DISORDERS

When one considers the wonderful balance which is maintained, not in the peripheral nervous system only (as evidenced by the action of opposing muscles in the acts of walking, standing, etc.), but especially in the vegetative nervous system, examples of which are manifold (as the equality of the pupils and the effects of light and other stimuli; the tone of the capillary system, and the rate of the heart-beat and its various rate modifiers), he is likely to give to the latter-named system the clinical weight which it so richly deserves, but which, for lack of definite knowledge of the effects on it of various agencies such as chemicals, ductless glands and metabolic disturbances on the various organs, is now being actively pursued.

TABLE 2.—EFFECTS OF CHEMICAL STIMULATION

Part or System Affected.	Effect	Drug Used
Synapse: autonomic (vagus system) sympathetic.	Paralysis ...	Nicotin.
Autonomic system.....	Stimulation..	Muscarin, pilocarpin, physostigmin, picrotoxin, digitalis and its derivatives, cholin, internal secretion of pancreas.
Autonomic system.....	Paralysis of terminals.	Scopolamin, atropin and belladonna derivatives.
Sympathetic in part.....	Paralysis (terminals).	Ergotoxin.
Sympathetic wholly or in part.	Stimulation..	Epinephrin, iodothyrin, pituitary extract, cocain.

The neurologist of to-day must needs fasten his attention, not alone on the study of the central nervous system, but also on the study of the vegetative nervous system—visceral neurology. How many are the cases which, when studied in this light, yield data which have helped to decide the correct and logical course of treatment instead of the formerly much-abused empirical course?

At this point it may be well to call attention to a renumeration of some of the more important symptoms and signs which the visceral neurologist must take heed of, given in Table 3.

Many other examples could be cited, but Table 3 constitutes a good framework on which one can build a classification of certain groups of diseases showing a predomination of vagotonic or sympathicotonic signs. Many of these signs and symptoms can be produced by decreased functioning of one of the systems with corresponding overfunctioning of the other; for example:

Tachycardia could be produced by paralysis of the vagus or overexcitation of the accelerators (sympathetic), etc.

Acrocyanosis, by paralysis or paresis of the vasoconstrictors to the skin.

Low blood-pressure by lessened sympathetic tonus.

Pigmentation of the skin in decreased sympathetic tonus.

IMPORTANT SYMPTOMS AND SIGNS

Vagotonic Symptoms and Signs	Sympathicotonic Symptoms and Signs
1. Myosis.	1. Mydriasis.
2. Accommodation spasm.	2. Paralysis of accommodation.
3. Epiphora.	3. Dryness of eyeballs.
4. Hyperhidrosis.	4. Dryness of skin.
5. Frequency of winking.	5. Infrequency of winking (Dalrymple's sign).
6. Salivation with constant spitting.	6. Dryness of mouth.
7. Hyperacidity of stomach contents.	7. Low gastric acidity.
8. Arrest of secretion of gastric glands (achylia).	8. Increased gastric secretion (gastrosuccorrhea).
9. Hypermotility of stomach and intestines.	9. Lessened intestinal tonus.
10. Vomiting.	
11. Diarrhea (8 to 10 times daily).	11. Constipation.
12. Spastic colon.	
	13. Faulty convergence of eyes (Moebius' sign).
14. Biliary colic (inhibited by atropin).	
	15. Wide eye-slits.
16. Enophthalmos.	16. Exophthalmos.
17. Bradycardia.	17. Tachycardia.
18. Low blood-pressure.	18. High blood-pressure.
	19. Vasoconstriction as seen in (a) peripheral anemias, (b) intermittent claudication, etc.
20. Pollakiuria.	20. Relaxation of detrusor of bladder (incontinence)
	21. Urticaria.
22. Asthmatic attacks.	
23. Esophagism.	
24. Mucous colitis (analogue of bronchial asthma).	
25. Gastrospasm and pylorospasm.	25. Atony of stomach.
	26. Gastroptosis.
27. Dermatographia.	27. No dermatographia.
28. Outspoken status thymicolymphaticus.	28. Tonsils small and atrophic.
29. Gag-reflex almost absent.	29. Gag-reflex marked.
30. Eosinophilia.	30. Eosinopenia.
31. Pulsus irregularis respiratorius, which disappears with atropin.	
32. Irregular breathing (disappears with atropin).	32. Tachypnea with dyspnea (not affected by atropin).
33. Clammy hands and feet.	33. Dry hands and feet.
34. Priapism.	
35. Aschners' phenomenon produces slow pulse.	35. Aschners' phenomenon produces no change in pulse.
36. After atropin-pressure on eyeballs produces no slowing of pulse.	
37. Increased fat tolerance.	37. Steatorrhea.
38. Increased carbohydrate tolerance before and after epinephrin administration.	38. Lowered carbohydrate tolerance before and after epinephrin administration (i. e., epinephrin hypersensitiveness).
39. Pilocarpin causes extreme salivation.	39. Pilocarpin causes no salivation.
	40. Loewi test.

TESTS

The following tests are used in the physiologic and pharmacodynamic studies:

1. *Loewi's Test.*—From 2 to 3 drops of a 1:1,000 epinephrin solution, instilled into the eye of a normal person, produces vasoconstriction but no pupillary dilatation. In some forms of hyperthyroidism, especially with lowering of autonomic sensibility, a pupillary dilatation occurs. This is also produced in pancreatic diabetes, that is, hypersusceptibility of pupils to epinephrin.

2. *Aschner's Phenomenon.*—Pressure on the eyeballs for from one-half to one minute produces no change of pulse in normal persons. When vagotonia exists there is a rather sudden slowing of the pulse with this procedure. (This effect is caused by pressure on the eyeballs stimulating the trigeminus and reflexly the vagus, stimulation of which causes bradycardia and stoppage of respiration in the expiratory phase.)

3. *Pilocarpin Test.*—Pilocarpin, 1/10 grain (hypodermically), causes extreme salivation and bronchial secretion in vagotonia. No salivation is noted in sympathicotonia.

4. *Fat Tolerance.*—The normal fat tolerance is from 100 to 150 gm. in twenty-four hours. The patient is given 200 gm. of butter, with meals, to be eaten in twenty-four hours. The stools are saved and examined for fat for forty-eight hours following. Fat-free stools indicate a vagotonic condition. Marked steatorrhea indicates a sympathicotonia.

5. *Carbohydrate Tolerance.*—Normally 100 gm. of glucose can be taken on a fasting stomach without a resulting glycosuria. In sympathicotonia a spontaneous glycosuria is produced, whereas an increased tolerance for glucose is present in vagotonia. The test is performed in the following manner:

On the fasting stomach 100 gm. of glucose with 400 c.c. of water are given at 6 a. m. The patient immediately urinates and hourly thereafter for five hours. The specimens are to be saved separately and examined for glucose. The first specimen is used as a control. The tolerance for carbohydrates can be determined then by increasing or decreasing the amount of glucose at each test until a faint reduction to Fehling's solution is produced.

6. *Epinephrin Hypersensitiveness.*—One hundred gm. of glucose by mouth and 1 mg. of epinephrin hypodermically are given from a quarter to half an hour later, and the carbohydrate tolerance test, just described, followed out.

In vagotonia no glycosuria is produced by this procedure. In sympathicotonia about 6 gm. of glucose are excreted in the urine in five hours.

7. *Pulsus Irregularis Respiratorius (Hering).*—On deep inspiration and on expiration only slight normal physiologic difference is noted in the rate and size of the pulse. In vagotonic states, inspiration causes increase in the rate of the pulse and decrease in the size; expiration causes slower pulse and increase in size (best shown by tracings).

8. *Dermatographism.*—A. After blushing (Polonski) produced by rubbing the skin, pathognomic of loss of equilibrium in the vegetative nervous system, probably deficient sympathetic tonus.

B. "Perverse reaction" (Hess and Konigstein).

Rubbing the skin produces stimulation of the pilomotor fibers and vasoconstriction, that is, sympathicotonia. Patients in this group usually have pallor of the face which gets paler under psychic stimuli (whereas the normal result should be blushing).

To attempt a clinical classification at this time with the foregoing data is without the scope of this paper, but it would not be amiss to give in general the results of observation in twenty-three cases studied from the point of view of vagotonia and sympathicotonia. These cases include 11 of exophthalmic goiter, 6 of neurasthenia, 1 of bronchial asthma, 3 of hyperthyroidism, and 2 of gastric ulcer.

In general, it was found that one case reacted according to the vagotonic or to the sympathicotonic classification only. Just one case of gastric ulcer could be considered pharmacodynamically and symptomologically vagotonic alone.

The hyperthyroidism and neurasthenic cases portrayed as many vagotonic as sympathicotonic signs, and were just as sensitive to epinephrin as to pilocarpin.

One case of bronchial asthma, clinically vagotonic, reacted violently to epinephrin with marked rigor,

tremor, chill, increased blood-pressure and glycosuria. This patient was also pilocarpin-sensitive. Atropin had no therapeutic effect on the attack.

Patients with exophthalmic goiter follow the clinical classification described in the outline, and a very interesting fact was noted in the these cases. The region most affected, the eye, heart, etc., was more sensitive pharmacodynamically than were others not so implicated. When tachycardia was marked, epinephrin caused greater relative increase of the tachycardia than it did on the blood-pressure or tremor when these were not so marked. One case showed 2 per cent. eosinophilia, after pilocarpin; this increased to 5 per cent.

The chief symptoms produced in patients sensitive to pilocarpin were: marked salivation and sweating, lowered blood-pressure and slight nausea, and capillary dilatation, increase in surface temperature sometimes amounting to 1 degree. In one case the pulse was *slowed*. Eosinophilia was noted twice in the series.

Epinephrin-sensitive patients reacted with tremor, tachycardia, increased blood-pressure (in one case by 20 mm. Hg), glycosuria and rigors.

Hemmeter has emphasized that "patients who already have an organic disease of the stomach will answer more readily to chemicals that excite the secretions and motions of the stomach than normal individuals." The same can be said of the heart, kidney, skin, ductless glands and the general nervous system.

The subject of vagotonic and sympathicotonic states is still in its infancy, and the sharp lines drawn by the originators of this conception will in time be so modified that a clearer conception of disease entities due to disturbances of the vegetative nervous system will be ferreted out.

Neuroses of various kinds, ductless gland disorders, vicious cycles, etc., will then be classified into rational clinical and pharmacologic bases. The fruits of these studies will not only enrich the fields of normal and pathologic physiology, but will also help to dispose of many fallacious conceptions existing in these realms.

Visceral neurology has come to stay. It will be found a stalwart weapon for attack on the diagnosis of many obscure conditions now classified under neurasthenia, neuroses, etc. The etiology of many common diseases, such as gastric ulcer, cardiospasm, constipation, ductless gland disturbances, etc., will be cleared up, thereby permitting a rational method of therapy.

At some future date an exposition of the cases will be given, and it is hoped that this paper will serve to stimulate active work in this fascinating subject.

I am greatly indebted to Dr. R. L. Wilbur for the use of patients in his wards.

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Heredity.—Heredity is not, as is often imagined by biologists, a necessary property of living matter, comparable to the inertia of matter, a sort of biologic postulate which does not require a genetic explanation for itself. It is, like all biologic phenomena, a product of evolution; it is an adaptation, the prototype of all adaptations. Moreover, it is of fundamental importance, because without it life itself could not have been preserved, nor could there be any stability of form or of mechanism.—Lugaro, Problems in Psychiatry.

THE SURGICAL TREATMENT OF POST-OPERATIVE PALATE DEFECTS

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Acquired openings through the palate, if surgical or due to accidental injury, show an active tendency to repair which quite often results in the ultimate closure of fissures that under other conditions might not be expected to close without surgical operative interference. When these lesions occur as a result of syphilis, the hard-palate defects show remarkable ability to close themselves if the parts are kept properly clean and protected by a suitably adjusted plate; but when luetic ulcerations have destroyed any portion of the velum the characteristic contractions of scar tissue usually so deform the soft palate that it suffers not only the ill effects due to the tissue actually lost, but also still greater injury through the deformity, which often is exceedingly difficult to overcome when restoration is attempted.

Aside from considerations pertaining to the nature of the cause of the palate fissure, and those which concern the constitutional treatment necessary to preparation for operation in individual cases, the actual surgical requirements do not differ materially from those demanded in closure of the postoperative palatal defects of congenital cases.

Bearing in mind these exceptions we may therefore include them all in the following classifications:

1. Contraction and arrested development of the hard palate, associated with intranasal and extranasal defects and irregularities of the teeth due to forcible compression in an effort to close the palate fissure in early infancy.

2. Defects in the anterior portion of the hard palate augmented by imperfect labial connection in this region, as found almost invariably when the premaxilla has been removed or destroyed in closure of double harelip, and sometimes when the premaxillary portion of the palate has not been perfectly joined to the other maxillary divisions in infant operations.

3. Openings through the central portion of the hard palate alone.

4. Opening at the junction of hard and soft palates involving both.

5. Hole in the central portion of the velum palati.

6. Defect occurring on one side at the posterior border of soft palate.

7. Fissure between the uvulae.

8. Imperfect form of the faucial arches due to defective operative results.

9. Velum too short.

10. More than one defect, including any of the forms previously described.

Each of the foregoing conditions may be subject to many clinical subdivisions with reference to form and situation, and each requires distinct recognition in determining the operative steps to be followed in attempting their correction. Failure in this respect means almost invariably an ineffectual result. The measure of an operator's success in the treatment of these cases, presenting as they often do, histories of many previous unsuccessful attempts to close such palatal fissures completely, will be determined largely by his ability to detect and overcome the underlying opposing factors in each case, and the accuracy with

which his operative methods may be modified to meet the existing adverse conditions.

Although good results have been reported by surgeons who have reoperated soon after it became apparent that the sutures of a previous operation would not hold and that sloughing of the parts was actively destroying tissue at the line of apposition beyond the hope of success, this does not seem to me to be an advisable procedure. It is altogether probable that such benefit as may have been secured in this way has resulted not, as has been asserted, so much from an improved local resistance due to leukocytosis as from the fact that separation of the mucoperiosteal tissue was more efficiently accomplished at the second than at the first attempt. Thus tension was more effectually overcome and the result consequently better.

In my own practice I am governed by the belief that once the mucoperiosteal flaps have been raised and moved across in an attempt to close the palate fissure, it is better, if possible, to allow a period of from nine months to one year to elapse before again undertaking the same kind of operation because it takes time to reestablish circulation in these tissues sufficiently to give them a dependable resistance. The underlying principle of all my operations has been to restore the parts in such form as to maintain as nearly as possible the natural relation of all of the tissues involved. The necessity for this I referred to at length in an article[1] illustrated by pictures of dogs' palates on which I operated according to different methods.

In undertaking the surgical closure of palatal defects, the omnipresent question invariably arises. Shall tissue be secured to cover the openings by dissecting free a sufficient area from one side and turning it over so that the structures are reversed with an attached pedicle on the inner border of that side and suturing the free edge to the freshened border on the opposite side in accordance with the principles governing the Davies-Colley and other similar operations in the performance of uranostaphylorrhaphy, or shall mucoperiosteal flaps be raised and brought together by taking advantage of the arch of the palate supplemented by liberating incisions on each side to aid in effecting coaptation along the central line after the methods of von Langenbeck as modified at the present time?

The objection that I have previously urged against flap-reversing operations is that they do not appear to give the best results in the course of postoperative development. This does not hold in anything like the same degree against the employment of these methods in closing small openings because the importance of periosteal activity in bone production in these cases is not so great. Nevertheless, I feel that it is worth every effort to try to gain the desired results without disturbing the natural mucoperiosteal relationship to the bony portion of the palate, whether the opening be large or small. Although conditions favorable to bone formation are not so vital as when a large palatal fissure is involved, there is always the possibility of more or less sloughing in spite of every care. It is therefore better to keep the parts in such form that subsequent granulation of the wound surfaces will tend to fill in any opening that might still exist. If it does not fill in completely by granulation the result on the surrounding structures ought to be favorable rather than unfavorable to successful closure at a later operation, should one be necessary. The loss of a flap so raised and reversed as to leave a corresponding surface of bone denuded might render further surgical operative measures practically useless because this portion of the palate might not be completely restored, and any such bare surface would at best be covered only by a thin layer of tissue that would not be dependable or serviceable for flap purposes.

The difficulties which are to be overcome, or through which in my experience defects most often result are:

1. Separation at the line of coaptation and sloughing may result from tension on the sutures caused by tying too tightly in the effort to force the parts together when the mucoperiosteal flaps have been insufficiently freed from the bone surfaces, or are too scant to cover the palatal opening without tension.

2. The contraction of scar tissue following the granulation process that reduces the size of the aperture during the weeks or in some cases months following the previous operation usually gives a more or less funnel shape to the hole with the slope, more marked in a direction from above downward toward the outer surface. The effect of this is that if a complete paring of the tissue at the inner border of the open space is made entirely through from the palatal to the nasal surface much valuable tissue will be lost unnecessarily. If the raw surfaces are secured by splitting the tissue without paring the borders, there is too much tendency to resumption of the original form of the tissue borders during the healing process and this is not favorable to union along the line of tissue coaptation. Usually a sufficient paring can be made to secure raw contact surfaces without serious tissue loss, by careful estimation of the portions of the flap borders that will meet when sutured.

The first of the difficulties enumerated that are due to tension should be overcome by freeing the mucoperiosteal flaps from the bone surfaces as for uranoplasty according to the modified von Langenbeck method, but there is an added adverse factor in the cicatricial tissue that is formed from previous operative procedures which sometimes makes removal very difficult because the mucoperiosteum under these conditions clings tightly to the bone surfaces, and being less elastic than it is under normal conditions is easily injured if too much force is applied in its separation or if the effect of the stress be in a wrong direction. To avoid unnecessary traumatic injury the firmly attached fibrous bands should be completely severed by a thin-bladed knife at just the right angle to make separation between the soft tissue and the bone without injuring the former, otherwise they will be very apt to cause prompt contraction after operation with disastrous results. The denudation of the tissue border surrounding the opening is best performed by following the slant of the openings sufficiently to give a broad raw surface up to the point at which the constriction is most evident. Splitting from this point all round will then give an added thickness without undue loss of tissue.

3. The greater scar tissue contraction on the nasal surface which results from securing raw surfaces by stripping the mucoperiosteum from the bone surfaces tends to cause retraction, which must be unfavorable to success unless counteracted.

1. Brown, G. V. I.: The Speech Relation of Cleft Palate Operation, THE JOURNAL A. M. A., Oct. 19, 1912, p. 1440.

4. In the endeavor to secure tissue flaps that may be sufficiently large or free from tension when sutured, the blood-supply may be so reduced that necrotic conditions are inevitable.

5. In many cases the parts have not been properly approximated at the previous operations, yet sufficient union has taken place to keep up uneven muscular action. For example, one side may be a little more forward or higher up than the other. Always when the parts are again freed and sutured unless this inequality is corrected there will be a tendency to reassertion of wrong action of muscular fibers that should coordinate. I have found in large numbers of cases that operation after operation had been uselessly performed, because no form of tension suture could hold against the inequality of the strain of ill-united tissues yet readjustment of the parts to more natural anatomic lines gave prompt and perfect union.

6. Sometimes the tissue covering the bony palate, especially at the posterior central portion, is so thin that the combined periosteum and overlying glandular vascular and mucous structures when raised together to form a mucoperiosteal flap are insufficient to resist the bacterial and muscular counteracting influences.

7. There may be an almost denuded bone surface on one side of the palate and an abundance of tissue on the other.

The inequalities due to wrong coaptation, particularly in the region of the soft palate, must receive due consideration. When the borders are loosened from the bone surfaces and ready to permit coaptation of the flaps in the central line without tension, this must be done so that there will be the nearest possible approximation to normal lines. Not infrequently, when several unsuccessful operations have been previously performed, all one can hope to accomplish immediately is readjustment of the parts which will make complete closure later on more easily secured. When this is accomplished, then any defect that may still remain is readily closed; but if it be overlooked the result may leave the palate in worse condition instead of better. When there is almost total absence of tissue on one side due to extensive sloughing or ill-advised destruction at the previous operation with the tissue full on the opposite side it is sometimes necessary to bring about the transposition of good tissue from one side to the other so that at the final operation there may be at least a reasonable measure of tissue from both sides from which to construct flaps. This is done by making a complete closure of the opening and carrying the flap from the good side to the poorer one in such manner that tension will be so distributed that the opening will occur between the two points. In a number of instances I have been able ultimately to close perfectly palates that seemed to be utterly hopeless because there was practically no available tissue left on a sufficient portion of one side of the bony palate.

A large proportion of the most difficult postoperative defects are found among the patients who have been operated on in early infancy by compression or forcing together of the maxillary bones with silver wire and lead plates in an attempt to close the fissure. These may present any of the foregoing defects and in addition such persons almost invariably have nasal defects, quite often with histories of middle-ear and mastoid troubles also, and deformities of the mouth due to contracted palates and loss of tooth germs through their destruction in the course of the insertion of the wires. Teeth in these cases are frequently found in nearly every conceivable form of irregular development.

The treatment of these mouths naturally involves questions which pertain to health as well as defective speech and facial deformity. In addition to the operative corrections which are the same as for other cases, much may be done by expansion of the upper arch and proper alignment of the irregular teeth. As a rule it is difficult to accomplish this safely by any of the well-known orthodontic methods except with such modifications as may prevent too active separation of the upper maxillae, but in the course of time such treatment may give considerable benefit even though the results can never be as perfect as if there had been no compression of the bony parts.

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MEDICAL AND SURGICAL WORK ON BOARD A U. S. BATTLE-SHIP

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The question is often asked not only by laymen but also by members of the civilian medical profession: "What do you do aboard ship to pass away your time? You have only men, and they are healthy, or you would not take them." The following brief and more or less general notes on what we have done during the six months between Oct. 1, 1913, and April 1, 1914, on board this ship — U. S. S. *Wyoming* — might serve to dispel some erroneous ideas. This particular period is not taken because it happens to be exceptionally full. Our reports are sent to the Navy Department quarterly, and the foregoing period includes two complete quarters, thereby making the data more easily tabulated.

Every large cruising ship with hundreds of men aboard has to deal practically with the same conditions, depending, to a certain extent, on the part of the world in which it happens to be. We had to be particularly careful during the cruise of the battle-ship fleet around the world. Thousands of men were given liberty in every port visited, in many of which cholera, plague, leprosy, yellow fever and small-pox were endemic.

Life aboard ship is unnatural under the most favorable conditions, and life aboard a battle-ship is particularly so. We are constantly being exposed to frequent, sudden and severe changes of climate. For example, take the past winter's cruise. We spent the winter months in Cuban waters, sailed north March 15, shifted from white uniforms into blue March 18, and on March 20 we ran into a stiff norther with a blinding snow-storm.

A modern battle-ship is perhaps the highest type of concentrated mobile power developed by the mind of man, containing a greater variety of mechanisms than any other structure as yet constructed. It is a mass of machinery controlled by steam and electricity which must be operated by man. Both officers and men are engaged in a hazardous occupation at all times, night and day, such as handling boats in bad weather, working around the machinery, engine- and fire-rooms, drilling with guns and turrets, coaling the ship, hand-

ling ammunition, and performing a thousand and one other things which go to make up our daily life. The constant noise, bugle-calls, vibrations, artificial light and ventilation, routine and irregular hours tend to bring out very quickly any weak mental strain of which, previous to enlistment, the man was not aware. The life is one of the "survival of the fittest," and the unfit are soon discharged, either by medical survey, undesirability or court-martial.

The ship to which the following notes refer is the U. S. S. *Wyoming*. It is a battle-ship of the super-dreadnought class, of 26,000 tons displacement. The armament consists of twelve 12-inch guns mounted in six turrets, together with twenty-one 5-inch guns and two submerged torpedo-tubes. It is the fleet flagship of the commander-in-chief of the United States Atlantic Fleet. This ship has been in commission one and one-half years, during which time I have served on board as the senior medical officer. Our complement of officers and crew comprises a total of 1,157.

The sick-quarters are ample, well-arranged and thoroughly equipped. They consist of the sick-bay proper, containing twenty-four bunks; an isolation ward of four bunks; an operating-room with all the modern sterilizing apparatus, pedal sinks, lights, etc.; bath-room; a venereal dressing-room; dispensary, and surgeon's office. We have two "battle dressing stations," both below and behind armor, which would be manned during battle, the present sick-quarters being abandoned. Our equipment is practically perfect, instruments, microscopes, test cases, dressings, drugs, typewriters, medical books and weekly medical journals being liberally provided by the Bureau of Medicine and Surgery of the Navy Department.

Our peace working force consists of a junior medical officer, a hospital steward, who is an expert dispenser of drugs, and an excellent clerk, seven hospital corps men who are trained attendants, and myself. During battle twenty members of the crew are detailed for special duty as first-aid men.

During the past six months we have visited New York; Hampton Roads, Va.; Malta; Naples, Italy; Villefranche, France; Culebra, U. S. W. I.; Guacanayabo, and Guantanamo, Cuba. We have cruised approximately 15,000 miles. We have passed through four separate periods of target practice, a four-hour speed run and an endurance run of twenty-four hours.

The fleet is usually accompanied by a hospital ship, and we endeavor to send all of our serious cases, contagious and chronic cases, etc., to her; but, of course, when we are at sea this is not practicable. Then again, as there is only one hospital ship, it is obviously impossible for her to accompany all of the ships of the United States Navy at one time.

We have many large naval hospitals situated in the large ports on the Atlantic and Pacific coasts of the United States, and also in Honolulu, Yokohama, Manila and Samoa. When a cruising ship gets in touch with these hospitals the cases unsuitable for aboard ship are immediately transferred. We must constantly keep before us the object of a man-of-war, but we must also use good judgment and not transfer patients who will soon recover aboard ship.

It might be stated here that a medical officer alternates between duty aboard ship and duty ashore, usually the length of each period being three years.

The young medical officer has a tendency to transfer more cases than necessary before he has become accustomed to the peculiarities of naval life. He brings with him from civil life ideas of "absolute quietness," "milk diets," a "large, inexhaustible and extremely varied supply of drugs," etc.; but he soon becomes accustomed to the use of a small but necessary collection of medicines and his "milk diet" consists of evaporated cream from cans, or soups. Noise does not seem to have much effect on the bluejacket. He grows so accustomed to it in his daily life that the firing of a salvo of 12-inch guns from the deck over him does not disturb him in the least. Target practice has become so common that some of the sick sleep calmly through it, and a convalescent from appendicitis does not show a rise in temperature of even a tenth of a degree.

Before I present a tabulation of our work it might be stated that the clerical work of our department is of no small detail. The records of all injuries, no matter how insignificant, and notes on all diseases must be recorded carefully on each man's individual health record, and particular attention is given as to whether or not the injury or disease is in the line of duty. This record accompanies the man throughout his entire enlistment and serves as important memoranda for succeeding medical officers. After expiration of enlistment this record is forwarded to the Navy Department and kept on file for future use by the Pension Bureau.

We also have quarterly and annual reports, sanitary reports, reports of various boards, laboratory reports and the careful filling out of a man's discharge papers on expiration of enlistment.

Following is a brief record of some of the medical, surgical and hygienic conditions with which we have dealt aboard this ship during the six months mentioned. The greater number of the major operations were performed when we were under way, sometimes in bad weather, and at other times when we were engaged in battle maneuvers at full speed. The junior medical officer was absent about two months on special temporary duty in Haiti during one of the recent political disturbances. During that time a member of the hospital corps acted as my first assistant. The hospital steward administered anesthetics.

The bugle announces sick-call at 8:30 o'clock every morning. The men present themselves and there are usually between fifteen and forty who need attention. Those actually on the sick-list are excused from all duties and are placed in the surgeon's division. The signed report of the number of sick is sent to the commanding officer before 10 o'clock. The daily average number on the sick-list for the past six months has been 8. There is an evening sick-call at 8 o'clock for any special cases. Naturally, frequent calls are made at the sick-bay at odd hours.

Under the heading of medicine we have had the usual bronchial and intestinal diseases, Bright's disease, lobar pneumonia, tapeworm, a great variety of skin affections, tuberculosis, measles, mumps, malaria, erysipelas and enuresis.

Various forms of insanity, epilepsy and milder mental affections were dealt with. One is sometimes called as a witness, either common or expert, when one of these persons commits an offense.

While in the tropics we treated a number of severe sunburns, stings by jelly fish, cases of dengue and thermic fevers.

Extraction of teeth was a common occurrence.

Heat prostrations while at work in the fireroom provided some cases.

We had four deaths. These were due to drowning. One of our boats capsized. Three bodies were lost. One man was pulled out of the water in an unconscious state. We tried the usual means of resuscitation, but to no avail. One other death, that of our late commanding officer, occurred, but at a hospital four days after transfer.

RECORD OF SURGICAL WORK DURING SIX MONTHS

Operations:	*No.*	*Anesthetic*
Appendicitis	5	Ether
Hernia, inguinal	8	Ether
Varicocele	2	Ether
Osteotomy (metacarpal)	1	Ether
Adenectomies	3	Ether
Hemorrhoids (clamp and cautery)	2	Ether
Amputations:		
Right arm, elbow	1	Ether
Index-finger	1	Cocain
Pterygium	5	Cocain
Circumcisions	7	Cocain
Salvarsan and neosalvarsan, intravenously	28	
Aspiration, chest	1	Ethyl chlorid
Nasal polyps	2	Cocain
Innumerable abscesses, boils, cellulitis affections, buboes, ingrowing nails, etc., under local anesthetic.		
Injuries:		
Dozens of cases in which cinders, coal-dust, pieces of steel, etc., had become embedded in the cornea.		
Hundreds of cases of mild lacerations and cuts which required one or more stitches.		
Many cases of sprains and bruises.		
Fractures:		
Compound comminuted of fibula opening ankle-joint	1	
Simple, multiple, of tibia and fibula	1	
Metacarpal bones	5	
Phalanges	2	
Nasal bones	5	
Ribs	1	
Genito-Urinary Diseases:		
Syphilis	12	
Gonorrhea	62	
Chancroid	45	
Wassermann tests are obtained when we are near a hospital or a hospital ship.		
Sounds were frequently passed and bladders irrigated.		
A special room is fitted up for venereal prophylaxis and any man presenting himself with a venereal disease, who has not taken prophylaxis, is subjected to disciplinary measures. Exceptions are made for an extended liberty or leave where there is lack of facilities.		
Vaccinations	254	
Typhoid vaccine	10	
These are men who for reasons of unexpected transfer, etc., have not been properly protected at training-stations.		
Laboratory Examinations:		
Urine	282	
Sputum	55	
Blood	8	
Pus	13	

In addition to the foregoing, which may be considered as being directly in the province of a medical man, the following other duties have been performed.

Two hundred and ninety-eight men were examined for transfer to other ships. This is a routine examination and consists in examining the heart, lungs and inguinal rings; looking for venereal diseases, and noting the general physique and cleanliness. A similar examination, but a little more complete, is made of all men joining the ship. During these examinations the health records and enlistment records are verified and any corrections made. Nine men were examined for reenlistment.

The eyesight of all gun-pointers, men in the range-finder group, spotters, signalmen, etc., were examined as a routine by the vision test-card.

Commissioned and warrant officers are examined carefully once a year to determine whether or not they are physically fit to take the prescribed walk every month, and as to their physical fitness for sea duty. Fifty-nine officers were examined in January.

Divers are examined before they go down; diving is not unusual, as this is necessary when anchors are lost, when torpedoes go astray and when for some reason it is necessary to examine some valve in the hull of the ship. All men are examined before engaging in any official boxing contest.

All fresh provisions, meats, ice-cream, etc., were examined and passed on by a medical officer before they were accepted.

Weekly and, sometimes, more frequent lectures or talks to the crew on venereal prophylaxis, personal hygiene and first aid were carried out.

Special instruction in first aid and transportation of the wounded to a special group of men, detailed for such duty in the medical department during battle, was given at frequent intervals.

Special instruction, for one and one-quarter hours, five days a week, to the hospital corps in common-school branches and on the subjects pertaining to our special department is compulsory.

Frequent examinations, particularly for the percentage of carbon dioxid of the air in the various compartments below decks, and routine examinations of the water distilled for the determination of sodium chlorid is made. It can readily be conceived how careful we must be in this matter.

The senior medical officer inspects daily the ship's cells, water-closets, wash-rooms, barber-shop, galleys and pantries, and notes, at all times, the state of cleanliness among the crew.

Once a week, in company with the commanding and executive officers, he makes a complete inspection of the whole ship, including the holds, store-rooms and living-spaces. Any recommendations regarding cleanliness and general sanitation are made to the captain. A complete inspection of this ship takes about four hours.

The regulation of the heating and ventilating system is under our complete supervision, and this is no small matter aboard a ship of this size.

Briefly, our system of heating is what is called the "indirect heating and ventilating system." The air is drawn through numerous ventilators by means of fans. It then passes over a collection of steam coils called thermotanks, where it is heated, if necessary, and then distributed to the various compartments. Constant supervision of the thirty-one blowers, twelve thermotanks, various hatches, etc., must be kept.

Besides all this, the medical officers are ordered on various boards, courts martial, courts of inquiry, boards of investigation, etc.

When arriving at a foreign port the medical officer acquaints himself with the prevailing diseases, quality of the water, and anything which may be of value as to the recommendations which he may make to the commanding officer concerning the liberty of the crew.

In January, while we were engaged in war maneuvers off Culebra, U. S. W. I., the junior medical officer

with members of the hospital corps landed and engaged in sham battles.

There are weekly and daily drills such as battle-drills (general quarters), fire-drills, abandon ship, landing force, fire and rescue, man overboard, etc., in which we all have our station.

From the foregoing it will be seen that our work is varied and rather extensive in its scope. When at sea one cannot call in a specialist or a consultant. We must be prepared to amputate a leg, do an appendectomy, trephine a skull, perform a mastoid, enucleate an eyeball, or extract a tooth.

We must be ready to diagnose and treat pneumonia, immediately recognize and isolate contagious cases, be watchful for feigned illness, and our microscope must be in use constantly.

The medical officer must have the military efficiency of the ship in mind at all times and keep all the men, if possible, at their duties. He must know men and learn to command them.

The successful naval and the successful military surgeon must combine in himself the qualities that make a good doctor, a successful surgeon and a hygienist of the highest order.

Our duties and the conditions we should have to meet in time of battle will not be discussed here.

It can readily be seen that military organization, our proximity to the sphere of activities, and a well-equipped department are the conditions which make possible the accomplishment of the foregoing.

THE COMPARATIVE VALUE OF MODERN FUNCTIONAL KIDNEY TESTS

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The great importance if not absolute necessity of functional kidney tests prior to operation as well as for diagnostic and prognostic purposes is now conceded not only by urologists but also by the profession at large. Notwithstanding this fact, a great difference of opinion exists as to the relative value of the various tests used at present. Rovsing prefers the urea test. Thomas of Philadelphia declares chromo-ureteroscopy with indigocarmin the most valuable. Geraghty and Rowntree exclude other tests as unnecessary if phenolsulphonephthalein be used. On the other hand, Ware of New York adduces evidence to show that the latter is practically valueless. Kapsammer asserted that the phlorizin test is even more conclusive than exploratory incision, while, going to the opposite extreme, Gaillard of Philadelphia in a recent article mentions the phlorizin, phenolsulphonephthalein, urea and the other functional tests only to condemn them. He considers them a waste of time and states that microscopic examination of catheterized ureteral specimens give positive proof of all we desire to know regarding renal sufficiency and insufficiency.

Especially since the introduction of phenolsulphonephthalein by Geraghty and Rowntree, much has been written regarding the practical value of these tests. In the medical literature of this country one finds almost weekly new publications based on experiments with that drug. In fact, the whole question of renal function seems to center around the phenolsulphonephthalein output. It seems to me that other tests have been recklessly and unjustly abandoned in favor of phenolsulphonephthalein, and I would venture the opinion that the question of the reliability of functional kidney-tests has not been greatly advanced by the application of a single test only. It therefore seems appropriate to compare some of the older tests with the phenolsulphonephthalein, in order to settle the question as to whether or not the application of one test is sufficient and if the phenolsulphonephthalein test really deserves the unlimited confidence which, especially on the American continent, it at present enjoys.

This report is based on the application of 108 tests, using in the majority of cases after catheterization of the ureters the phlorizin, phenolsulphonephthalein and urea tests simultaneously for the determination of comparative functional value. In many cases in which conditions warranted it, the determination of total renal function has been accompanied by blood cryoscopy, and in other instances in which cystoscopic features seemed to indicate its application, indigocarmin has likewise been used.

I wish to state that in order to speak authoritatively on the efficacy and value of renal functional tests, one must be thoroughly familiar with the technic of their employment. This is particularly true with the phlorizin test. The slightest error may be responsible for a negative or poor result. Unless the phlorizin crystals be entirely dissolved and the solution recently prepared, the excretion of sugar will either be late, small in amount or altogether absent. It is possible that a great deal of the adverse criticism directed against phlorizin is due to this error in technic. Likewise with the phenolsulphonephthalein test, one must be careful to inject the entire amount of the dye into the vein and also to use ureteral catheters of sufficient size and equal caliber. It is true that leakage of urine does occasionally occur along the sides of the catheters. This objectionable feature can be entirely obviated, however, by the use of tapered occlusive catheters.

METHOD

The method of procedure in this series of cases was as follows: An ordinary examining cystoscope was first introduced for the purpose of determining the general cystoscopic features such as the outline of the sphincter, the appearance of the trigon, fundus, etc.

After the withdrawal of this instrument the double catheterizing cystoscope was immediately inserted and the ureters catheterized to the pelvis of the kidneys. Whenever a catheter was inhibited in its progress, careful note was made of the distance of introduction. Three sets of two bottles, each numbered 1, 2 and 3, were kept ready for use. They were labeled R and L and in them was collected the urine from the right and left kidney, respectively. As soon as the ureters were catheterized, 2 c.c. of a 0.5 per cent. phlorizin solution were injected intramuscularly. While the appearance of sugar was being awaited, enough urine was collected in bottles numbered 1 for microscopic examination and for the comparative quantitative urea estimation. As soon as the reduction of heated Fehling's solution contained in the test-tubes became apparent on both sides, the bottles numbered 1 were changed for the bottles numbered 2 and the urine collected for fifteen minutes. At the expiration of this time 1 c.c. of a phenolsulphonephthalein solution containing 0.06 per cent. of the dye was injected intravenously. The urine from each kidney was then permitted to flow into the two test-tubes containing a 25 per cent. solution of sodium hydroxid. As soon as the characteristic discoloration occurred in both tubes, the time of appearance was recorded in the usual manner and the urine collected for fifteen minutes in bottles numbered 3.

In cases of urinary obstruction in which operative procedure was contemplated, an estimation of total function was made by means of blood cryoscopy and by the determination of the amount of phenolsulphonephthalein contained in the bladder-urine during a period of two hours and ten minutes after the injection of the dye.

Following these tests a note was made of the microscopic findings, particular stress being laid on the presence of leukocytes and degenerated small round epithelial cells. The amount of urea was determined by two Doremus ureometers, and the quantity of sugar by means of two Lohnstein saccharimeters. The quantitative phenolsulphonephthalein estimations were made by means of colorimetrically graded test-tubes as described by Hugh Cabot. These were found sufficiently accurate for ordinary practical purposes.

RESULTS

In normal kidneys, after the injection of phlorizin, sugar made its appearance in the urine in from nine and a half to thirty-one minutes. The average interval was 18 $^{1}/_{10}$ minutes on the right and 17 $^{8}/_{10}$ minutes on the left side. The quantity of sugar varied from 0.1 to 3.2 per cent., and averaged 1.1 on the right and 1.08 on the left side. The amount of urea averaged 0.14 per cent. on the right and 0.16 on the left side. The time of appearance of phenolsulphonephthalein varied from 3 to 9½ minutes. The average interval was 4 $^{17}/_{10}$ minutes on the right and 5 $^{1}/_{10}$ minutes on the left. The amount of phenolsulphonephthalein varied from 2 to 30 per cent., and averaged 15.6 per cent. on the right and 16 per cent. on the left.

In cases of unilateral pathologic kidneys, sugar appeared after phlorizin injection in from 18 to 65 minutes, averaging 35 minutes, while it was excreted from the normal kidney in from 10 to 25 minutes, averaging 15 $^{7}/_{10}$ minutes. The amount of sugar in the same pathologic cases varied from 0.3 to 0.78 per cent., averaging 0.29 on the functionally insufficient side, while on the normal side the amount varied from 0.44 to 4 per cent., and averaged 1.91. The amount of urea varied from 0.002 to 0.011 per cent., averaging 0.007 from the functionally insufficient kidney and from 0.013 to 0.15 per cent., averaging 0.04 from the normal kidney. In unilateral as well as in bilateral pyelitis the time of appearance of phlorizin and phenolsulphonephthalein as well as the amount of phlorizin, phenolsulphonephthalein and urea was the same on both sides.

CONCLUSIONS

1. In normal cases the time of appearance of sugar and phenolsulphonephthalein is comparatively the same on both sides.

2. In normal cases the phlorizin, phenolsulphonephthalein and urea tests show almost identical values for both kidneys, their efficiency as comparative tests thus appearang to be about equal.

3. In pathologic cases all three tests show almost equally low values on the diseased as compared with the healthy side, thus demonstrating their almost equal practical value.

4. The simultaneous application of the preceding tests in the manner described tends toward greater accuracy of results, is not especially time-consuming, is not complicated and does not require more than the ordinary skill, which can be attained by an intelligent nurse. Moreover, it gives positive assurance as to which kidney is performing the greater amount of work, thus rendering unnecessary a repetition of ureteral catheterization for the purpose of gathering additional evidence regarding renal functions.

5. In pathologic cases a coincident diminished functional value on one side in all three tests points unmistakably to a marked defect in the corresponding kidney. This in the presence of a normal functional value on the opposite side, and satisfactory total functional values as ascertained by blood cryoscopy, the bladder phenolsulphonephthalein test, etc., would permit of the removal of the diseased organ.

6. A single renal functional test may lead to erroneous deductions and does not give sufficient assurance to justify a radical operation such as removal of the kidney.

7. Prior to operation, comparative functional tests should be strengthened by tests of total renal function.

8. The urea test consumes the least time and is accompanied by a minimum of discomfort to the patient. Moreover, it is not based on the elimination of a foreign substance.

9. As compared with the phlorizin test, the phenolsulphonephthalein test is subject to fewer technical errors and is less time-consuming, a factor of no little importance to the patient as well as to the physician. On the other hand, the quantitative estimation of the excreted dye even with the Duboscq colorimeter is subject to a not negligible amount of error, while following phlorizin injection the estimation of sugar by means of the Lohnstein saccharimeter is mathematically correct.

Shreve Building.

A CASE OF TAY-SACHS AMAUROTIC IDIOCY WITH A POSITIVE WASSERMANN REACTION *

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PHILADELPHIA

The following case is reported not because it is a typical example of Tay-Sachs amaurotic idiocy, but on account of a positive Wassermann reaction having been obtained from the patient's blood-serum, and the possible bearing this may have on the etiology of the affection.

B. L., boy, aged 16 months, Hebrew, of Russian parentage, examined March 3, 1914, was said by the parents to have seemed normal until about 2 months old. He did not take any notice or sit up at the usual time, had never talked and had never attempted to walk. His first tooth was cut when he was seven months old. The child seemed backward in every way and had one convulsion two months prior to the examination in which he lost consciousness, became rigid, the eyes being open and staring. After the attack, he started to cry, then fell asleep. Since this convulsion, the baby had seemed dull and had not helped himself as much as formerly. He drops objects placed in his hand. Other attacks are described as follows: "He will become nervous, red in the face, hold his breath for a second or two, his arms and legs will stiffen, he will then cry."

The child was born at full term, the labor being normal. He is said to have weighed 7 pounds at birth and has contracted none of the infectious diseases of infancy. He is the only living child, the parents having had one other child which died shortly after birth from a "hemorrhage of the navel."

The father and mother are both living and in average health. A paternal aunt, one of twelve children, had convul-

* Reported at the meeting of the Philadelphia Neurological Society, March 27, 1914.

sions. A maternal uncle had spasms until 9 years of age, when they left him. There is no case of blindness in the family, nor any history of nervous or mental disease except as mentioned above.

On examination the child was found to be well-formed and well-nourished, but with general muscular weakness. The reflexes were preserved and Babinski's sign was present.

Impairment of vision was evident and it was learned that the child had been under the care of Dr. L. Webster Fox. On communication, Dr. Fox gave me a report of the ophthalmoscopic findings, which were as follows: "Double optic atrophy with a red spot in the region of each fovea centralis, surrounded by a whitish or grayish areola." Dr. Fox had seen cases of amaurotic idiocy at Tay's clinic in London and stated that the fundus changes in this case were identical.

Dr. Thomas B. Earley made a Wassermann test of the blood and reported it positive (½ unit). An examination of the cerebrospinal fluid of the child and of the blood of the mother was refused.

In 1881, Mr. Warren Tay[1] of London presented a case in which the baby, then 1 year old, had been noticed at the age of 2 to 3 weeks to have very little power in holding up its head or of moving the extremities. This was a weakness, not an absolute paralysis. The child seemed cerebrally deficient. With the ophthalmoscope, Tay found the optic disks apparently healthy, but in the region of the yellow spot in each eye "there was a conspicuous, tolerably defined, large white patch, more or less circular in outline, and showing at its center a brownish-red, fairly circular spot, contrasting strongly with the whitish patch surrounding it." Some months later, Tay found no change in the child's condition except that the disks were becoming atrophic.

Sachs[2] of New York, delivering the presidential address before the New York Neurological Society in 1896, described a family form of idiocy, associated with blindness, which he designated as amaurotic family idiocy. In this communication, he referred to an earlier paper, read in 1887 before the American Neurological Association, in which he described a similar case under the title "Arrested Cerebral Development with Special Reference to its Cortical Pathology." He concludes that Tay's case and his own are similar in type and collects altogether nineteen cases presenting the same symptom-group.

The chief symptoms as originally described by Sachs are mental impairment, a more or less general paresis or paralysis which may be either spastic or flaccid, with corresponding changes in the reflexes; a diminution or loss of vision with the characteristic eye-ground changes, marasmus; a fatal termination, usually by the end of the second year, and the occurrence of the affection in several members of the same family. Occasional symptoms were nystagmus, strabismus and hyperacuity of hearing. In a later paper, Sachs[3] accepts two additional symptoms mentioned by Falkenheim: explosive laughter and disturbance of deglutition.

Since these earlier papers, cases have been accumulating fairly rapidly in the literature. As far back as 1908, Apert[4] collected eighty-two indisputable cases with twenty-seven additional cases occurring in brothers, sisters or relatives of the eighty-two, but not actually seen by the authors recording them.

Then, as might be expected, came reports of cases more or less closely resembling the original Tay-Sachs type, yet presenting certain distinct differences. Thus Vogt in 1905 described a form of family amaurotic idiocy, beginning in early youth, with gradually oncoming blindness usually associated with paralysis. In this form the characteristic macular changes are not found. Death occurs after several years and the disease shows no predilection for the Hebrew race. Vogt contended that the juvenile form he described and the Tay-Sachs disease represented different degrees of the same process. Gifford[5] quotes Vogt and reports a case of the same type.

Dercum[6] reported three brothers, aged 11, 6 and 2 years, who were normal until the ages of 16 months, 6 years and 2 years, respectively; then developed paresis of the extremities, spastic in type and associated with imbecility. In these cases, although vision appeared defective, an examination of the eye-grounds could not be obtained.

Other cases, more or less resembling the Tay-Sachs syndrome, have been reported by Hirschberg, Gordon, Nettleship, Behr and others.

The pathologic findings are chiefly microscopic and consist primarily in lesions of the gray matter throughout the entire central nervous system, with secondary changes in the tracts of the white matter. The cells are swollen, the nuclei displaced, the Nissl bodies lose their regular arrangement and the neurofibrils are destroyed. According to Coriat, chromatolysis is more marked than neurofibrillar destruction. The optic nerves are atrophied and there is marked involvement of the retinal cells, especially in the region of the fovea centralis. Thickened skull, thickened and adherent dura, pallor and edema of the convolutions have been found. Changes in the blood-vessels have not been reported. I think that none of these findings would exclude the possibility of hereditary syphilis as an etiologic factor.

The chief interest in amaurotic idiocy at present centers about this question of the etiology. Sachs believed it to be a type of agenesis and accepted Gower's term of "abiogenesis" as most fitting. In Sachs' article[3] of 1903 he defends his agenetic theory, but says that "the toxic nature of the degenerative process has been argued from the resemblance of the cell pictures to those found in cases of poisoning of various kinds." Turner[7] reports two cases of amaurotic family idiocy, one occurring in a child not of Jewish extraction, and after reviewing the pathologic findings in his own and previously reported cases, says, "Can syphilis be so certainly excluded from the causation as Carlyll would have us believe?" Turner believed that in both his cases there were points suggestive of syphilis and further quoted Gordon Holmes who had recorded a case of amaurotic idiocy in which the periadventitial cellular infiltration was, in Holmes' opinion, suggestive of congenital syphilis. Turner, however, seemed to consider as equally tenable, the theory of glandular deficiency or anomaly.

Frey does not agree with Sachs that the condition is merely agenetic, but considers the changes found to be post partum and analogous to the state known as amyatrophic lateral sclerosis in adults. This view of Frey's is of especial interest because of the finding of

1. Tay, Warren: Symmetrical Changes in the Region of the Yellow Spot in Each Eye of an Infant, Tr. Ophth. Soc. U. Kingdom, i, 56.
2. Sachs: New York Med. Jour., May 30, 1896.
3. Sachs: Jour. Nerv. and Ment. Dis., 1903, xxx, No. 1.
4. Apert: Semaine méd., Jan. 15, 1908.
5. Gifford: Ophth. Rec., 1912, xxi, No. 11.
6. Dercum: Jour. Nerv. and Ment. Dis., 1897, p. 396.
7. Turner: Brit. Jour. Child. Dis., 1912, ix. 193

positive Wassermann reactions in a considerable percentage of cases of amyatrophic lateral sclerosis.

Coriat[8] holds that Tay-Sachs disease is not due to any arrest of development because of the normal myelinization, and asserts that the macroscopic and microscopic changes are not in any sense those of idiocy. Furthermore, he contends that his cases showed normal mental characteristics up to the ages of 4 and 10 months, and says, "The disease, therefore, is not really an idiocy, but a form of dementia." Coriat suggests the name of "amaurotic family dementia" as being more appropriate than "amaurotic family idiocy."

Studies in the metabolism of amaurotic idiocy by Heiman, Bookman and Crohn[9] in 1912 revealed nothing abnormal.

Views as to the importance of hereditary syphilis as a cause of idiocy have undergone considerable change since the introduction of the Wassermann test. Dean,[10] in a most instructive article, after citing the findings of numerous observers who had examined the blood-serum of idiots by the Wassermann test, gave the results of his own work in the examination of 330 inmates of an asylum for idiots at Potsdam, in which he found the reaction positive in fifty-one cases, or 15.4 per cent. He also found that the younger the patient, the higher the percentage of positive Wassermanns obtained. Thus, at 10 years or younger, 21.27 per cent. were positive; from 16 to 20 years, 6.06 per cent.; from 21 to 30 years, twenty-four idiots gave three positive reactions, and eight idiots, ranging in age from 31 to 44 years, all gave negative reactions. A striking point in Dean's paper was the fact that of the fifty-one cases giving positive reactions, only seven showed conclusive evidence of congenital syphilis from a clinical point of view.

The lack of certain knowledge regarding the etiology of Tay-Sachs disease, the varied opinions expressed, the character of the pathologic findings and the positive Wassermann reaction in the case which I report would seem to be sufficient ground to reopen the argument that hereditary syphilis may be the cause of amaurotic idiocy. I fully realize that "one swallow does not make a summer," and my chief object in reporting the case is to stimulate interest in the subject with the hope that, as opportunity presents, careful laboratory investigation will throw more light on the point in question.

I wish to express my indebtedness to Dr. Fox for his courtesy in giving me the ophthalmologic report and for references, and to Dr. Earley, who went to considerable trouble and expenditure of time in the fruitless effort to obtain a spinal puncture in the case of the child and an examination of the blood of the patient's mother.

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8. Coriat: Arch. Pediat., 1913, xxx, 404.
9. Heiman, Henry; Bookman, Samuel, and Crohn, Burrill B.: Studies in Metabolism of Amaurotic Family Idiocy, Am. Jour. Dis. Child., October, 1912, p. 234.
10. Brit. Jour. Child. Dis., 1912, ix, 385.

Food Poisoning.—Food poisoning is rarely, if ever, ptomain poisoning; that is an intoxication due to a preformed poison of alkaloidal nature, derived from a breaking down of the protein in the food. The cases which have been carefully worked out in recent years have, on the contrary, proved to be due to infection with specific bacteria, or to intoxication with the toxins or synthetic products characteristic of these microbes.—C. E. A. Winslow.

HOW DEEP SHOULD THE TUBE BE INTRODUCED IN INTRATRACHEAL INSUFFLATION?*

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In my first description of the procedure of intratracheal insufflation as I developed it for practical use in intrathoracic surgery and for anesthesia, I stated that "a long catheter or stomach-tube is introduced through the larynx and pushed down the trachea until it meets an obstacle. The lower end is usually deep in the right bronchus. It is then withdrawn about an inch and a half, which brings the lower end of the tube to about the level of the bifurcation."[1]

The same statement I repeated a year ago in describing insufflation.[2] "After the tube enters the trachea it should be pushed gently forward until it meets with a resistance; the end of the tube is then usually in a deep place in the right bronchus. The tube should then be withdrawn about 5 or 6 cm."

It ought to be clear to any intelligent reader that the resistance which the tube meets consists of the smaller bronchi, the lumen of which is larger than the diameter of the tube. In the literature on the subject, however, a misunderstanding crept in. There are writers who apparently believe that by the resistance I meant the bronchial partition at the bifurcation, and some[3] are even criticizing my supposed statement, because, as they say, they did not find that the tube touches the partition wall. This misunderstanding, however, is of little significance and would not have caused me to write a special article on that subject. A fact of greater importance causes me to write the present article, namely, that practically all surgeons and anesthetists who employ intratracheal insufflation—and the number is now very large—do not follow my repeated advice. It has seemed to them that instead of pushing the catheter first deep into the bronchus and then withdrawing it to the bifurcation, it is a more simple procedure to introduce it from the start only as deep as the bifurcation. After finding that the average distance from the bifurcation of the trachea to the teeth is in an adult about 27 cm., a catheter is now used which has a mark about 27 cm. away from its lower end, and it is simply pushed into the trachea until the mark is at a level with the teeth. This practice, however, as I found out, deprives the surgeons of an important diagnostic point without which they are liable to be led into a serious error. I have observed this result in two cases and I have reason for my misgivings, that it occurs more often than it is suspected.

The diagnostic point in question is to make sure that the tube is indeed in the trachea and not in the esophagus. As a rule, at the time of the introduction, the patient has to be well anesthetized and does not respond with a characteristic reflex cough when the tube passes the larynx or touches the bifurcation; besides, some patients respond with a cough when merely the posterior wall of the pharynx or the entrance of the larynx is touched. The presence or

* From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.

1. Meltzer, S. J.: Med. Rec., New York, March 19, 1910, p. 481.
2. Meltzer, S. J.: Keen's Surgery, 1913, vi, 971.
3. Lautenschläger: Berl. klin. Wchnschr., 1913, p. 2093.

absence of a short reflex cough is no indication where the tube is. The point which is generally relied on to indicate that the tube is correctly placed in the trachea is the appearance of rhythmic expiratory and inspiratory changes of air-pressure at the mouth of the catheter, which can be heard or seen by the use of a bit of cotton. The conclusion is based on the supposition that such respiratory changes could not take place if the catheter were in the esophagus. This supposition and the conclusion are entirely erroneous. The respiratory variations within the esophagus are considerable, and they are present not only in the thoracic, but also in the cervical part of the esophagus.

These respiratory variations in the esophagus have been used by ourselves and by many others for obtaining a graphic presentation of respiration. I obtained respiratory tracings from my own esophagus about thirty-four years ago. Several years ago Auer and I[4] studied the respiratory changes of pressure at the various levels of the posterior mediastinum by means of a balloon at the end of a tube kept at various depths in the esophagus. The tracing published in the article reporting those studies shows the considerable respiratory variations in the esophagus in the various levels of its thoracic part; they are especially large in the entire lower section, located between the base of the heart and the cardia. In short, the appearance of respiratory variations at the mouth of the catheter is no evidence that the catheter is in the trachea; it may have been inserted in the esophagus. This was the case, as referred to above, in two instances in which I was an eye-witness. Men of experience in handling the method of intratracheal insufflation, who were present, seemed to have been sure that the tube was in the trachea, just on account of the presence of definite respiratory undulations at the mouth of the catheter. In neither of these cases was there any distention of the stomach.

It is well to bear in mind that this is not a necessary result in all cases when the tube is in the esophagus. When the lower end of the catheter is placed in the esophagus only 27 cm. away from the teeth, the lower end of the tube may still be above the base of the heart, and air and ether which come out from the lateral opening of the catheter will escape more readily upward through the esophagus and the mouth than into the stomach, especially when the reflexes and the tonus of the esophagus are completely abolished by the previous deep etherization. Furthermore, the upward escape of ether through the pharynx might even keep up the anesthesia; it is then a sort of pharyngeal anesthesia.

In my first paper on pharyngeal insufflation, about two years ago,[5] I stated that by this method animals were brought easily and profoundly under the influence of ether anesthesia, so that sometimes the spontaneous respiration disappeared, to return only half an hour after the ether has been discontinued, during which time, of course, artificial respiration had to be maintained. Similar results I obtained recently by inserting the tube in the esophagus, the lower end of the tube being in the upper section of the thoracic part. Not only did the animal become deeply narcotized, but it also lost its spontaneous respiration and had to have artificial respiration for several minutes.

In parenthesis I wish to make the following remark concerning the use of pharyngeal insufflation for anesthesia:

While I was one of the first to recognize and state the fact that pharyngeal etherization is capable of producing profound anesthesia, I did not then say anything in favor of its use. Now I do not hesitate to go on record as advising against its use. Of the various reasons I have for the stand I take, I shall mention only this one, namely, that this method is capable of driving infectious matter from the pharnyx into the lungs and there causing injury and infection. If the use of pharyngeal anesthesia should happen to be extensive and the results are honestly reported, I have no doubt that the number of postoperative aspiration pneumonias will be greater than after the usual drop-method of anesthesia. It could hardly be otherwise. In the drop-method the aspiration of foreign matter is accomplished by an inspiration which is greatly weakened by the anesthesia; while in pharyngeal insufflation that foreign matter is driven through a non-sensitive relaxed glottis by a virile mechanical insufflating force. With intratracheal insufflation it is, of course, just the opposite; the virile mechanical force of the insufflation is employed to keep off the foreign matter from entering into the larynx instead of driving it in.

What I said here of pharyngeal anesthesia holds true, of course, also of "esophageal anesthesia," that is, if the intratracheal tube, instead of getting into the trachea, is inserted into the esophagus at a depth from which air and ether escape readily upward. The insufflation, instead of preventing the occurrence of aspiration of foreign matter into the respiratory tubes, will rather assist in facilitating such an occurrence. These possibilities ought to be kept in mind when analyzing and collecting certain data for statistical purposes with reference to the occurrence of complications and sequelae attending the use of intratracheal insufflation.

At any rate, the appearance of respiratory phenomena at the mouth of the intratracheal catheter is no evidence that it is in the trachea; it might be in the esophagus and at a place from which air and ether escape upward and thus maintain anesthesia. I have witnessed two cases of the kind, and there is a well-founded suspicion that more of them have occurred, especially in the hands of uncritical men.

A reliable evidence that the catheter is in the trachea is the encountering of an undoubted resistance, while pushing the catheter downward—provided, of course, that stenosis or a diverticulum of the esophagus do not come into consideration. When a catheter fitting for an adult is pushed down into the trachea about 33 cm. distance from the teeth, the catheter is bound to meet bronchi of a lumen smaller than the diameter of the catheter and therefore cannot be pushed farther. If it can be pushed down still farther, the catheter is surely in the esophagus, and the lower end of it is still about 6 or 7 cm. above the cardia. While a catheter may bear a mark which indicates a distance of 27 cm. from the lower end, in order that it may be known safely to what point the catheter should be withdrawn again, it has to have also a mark at a distance of 33 or 35 cm. from the lower end. If the catheter, while pushed downward into the trachea, does not encounter any resistance when it reaches the last-mentioned mark, it can be safely assumed that it is not within the trachea and therefore ought to be immediately withdrawn. With exceptionally tall persons, perhaps an allowance of 2 cm. more may be made; but under all circumstances a resistance must be looked for and not missed. The practice of inserting the tube only to a place above the bifurcation must be discontinued.

4. Meltzer and Auer: Jour. Exper. Med., 1910, xii, 34.
5. Meltzer, S. J.: Pharyngeal Insufflation, a Simple Method of Artificial Respiration, The Journal A. M. A., May 11, 1912, p. 1414.

In this connection I wish also to urge the discontinuance of the use of catheters which have only lateral openings. For the sake of etherization as well as for an efficient artificial respiration when needed, it is of some advantage to have the opening at the end of the catheter, as I have stated in previous papers. I shall not, however, enter here on a special discussion of this point.

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THE CULTIVATION OF THE PLASMODIUM FALCIPARUM IN VITRO*

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PHILADELPHIA

In 1911, C. C. Bass[1] of New Orleans reported the successful cultivation of the plasmodium of malaria *in vitro*. He stated that he had been able to accomplish this by maintaining anaerobic conditions and a temperature of 40 C. (104 F.). Following these suggestions, Sinton[2] of London as reported in August, 1912, attempted the growth of the organisms from five patients, but he was not successful in any case. One of the reasons for his failure became apparent two months later when Bass, in conjunction with Johns, published[3] in detail his technic, which included, besides the facts previously mentioned, the addition of a small amount of dextrose to the collected blood. Bass and Johns did not explain the action of the dextrose, but stated that they thought it had other influences than the control of oxygen, possibly by reason of the largeness of its molecule decreasing the permeability of the red blood-cells to substances in the serum that were deleterious to the organisms. They stated that by their technic, the details of which need not be repeated here, they had succeeded in cultivating the *Plasmodium vivax* from six patients and the *Plasmodium falciparum* from twenty-nine; and Johns had previously reported the growth of the *Plasmodium malariae* from one case. In some cases they were able to maintain the growth through the fourth generation. They found, however, that growth did not occur beyond the first generation unless the white blood-cells were removed, and this they explained on the theory that the leukocytes, when present, destroyed the merozoites.

In some recent work with this method an interesting observation was made which is worthy of note. The case was from the service of Dr. Alfred Stengel, and Dr. O. H. Perry Pepper was associated with me in the study of it. The blood was taken for culture one hour after a chill and showed at that time, in addition to crescents of the estivo-autumnal type, many small ring-forms with only a small amount of nuclear chromatin and without pigment. There were no forms showing further development. Smears from the culture fifteen hours later showed that the rings were increased in size and there was more chromatin, but still no pigment. The crescents were less crescentic and more oval in outline. The twenty-four-hour smears presented even larger rings, the protoplasm filling the vacuole in some instances, the chromatin spread out and dividing, and pigment had appeared. The crescents were still more rounded and their protoplasm stained less deeply. After forty-eight hours large schizonts and segmenting forms with definite small masses of pigment had appeared, and in some cases the pigment had divided into from two to fifteen parts. The crescents could by this time be made out only because of their pigment, the outlines of the protoplasm having disappeared. Finally, in the sixty-one-hour smears from the culture, some of the red blood-cells presented small ring-forms, precisely similar to those present in the blood at the time of its collection. There were present no older forms of the asexual cycle in these smears, and similar small rings had not been observed in any of the intermediate smears. Thus it would appear that in this case the beginning of a second generation had occurred without the removal of the leukocytes.

* From the William Pepper Laboratory of Clinical Medicine.

1. Bass, C. C.: A New Conception of Immunity, THE JOURNAL A. M. A., Nov. 4, 1911, p. 1534.
2. Sinton: Ann. Trop. Med. and Parasitol., 1912, vi, 371.
3. Bass and Johns: Jour. Exper. Med., 1912, xvi, 567.

RESULTS OF AN IMPROVED PUBLIC WATER-SUPPLY AT COHOES, NEW YORK

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For many years Cohoes suffered from the inevitable results of a polluted public water-supply. The average death-rate per hundred thousand for typhoid fever for the past ten years was 83.8. Previous to 1911 Cohoes used the grossly polluted Mohawk River water without purification. In July, 1911, a gravity mechanical filter-plant was installed.

Chart 1 shows the marked reduction in the rates for typhoid fever and diarrhea and enteritis which promptly followed the furnishing of filtered water. The seasonal prevalence of both typhoid fever and "enteritis of children" was what might be expected in cities with polluted water-supplies; that is, excessive rates prevailed in the winter and spring months.

TYPHOID

A study of the seasonal prevalence of typhoid in Cohoes shows that during the months of July, August, September and October, which period has been termed the "regular typhoid season," the rates for typhoid have not been excessive. The rates from December to June have been very high. In Cohoes from 1908 to 1913, 75 per cent. of the deaths from typhoid occurred from January to June, and if we include December in the winter months, 90 per cent. of the typhoid deaths from 1908 to 1913 occurred in the months from December to June, inclusive. In other words, the months of July, August, September, October and November, including the "regular typhoid season" in which the great bulk of typhoid cases usually occur, furnished only 10 per cent. of the typhoid deaths.

With the seasonal prevalence so sharply defined for a period of many years, it is most interesting to note the effect of substituting a safe for a polluted public water-supply. Here again the expected happens. Chart 2 shows the annual typhoid death-rate by months. The period 1908-1911 (before filtration) is represented by a dotted line. The period 1912-1913

(since filtration) is represented by a solid line. Enormous reduction since filtration is evidenced in December, January and February, and a very great reduction in March and April. The difference is not so great from May to November. The low rates in the summer months indicate that the Mohawk River water for some reason was much safer from July to October than at any other season. Hence the effect of the filter-plant would be less on the typhoid rates for these months.

ENTERITIS

Diarrhea and enteritis under 2 years is an important factor in our mortality statistics. It probably includes a number of different diseases of diverse etiology.

One large portion of this mortality, the so-called summer diarrhea of children, seems to be independent of water-supply conditions. This mortality has its maximum intensity in July and August. It is greatest in large industrial centers, "mill-towns" and slum-districts of our large cities. A close study of the statistics and the sanitary conditions in our cities[1] shows that if the water-supply is safe, the mortality from diarrhea and enteritis under 2 years is very low during the winter and spring months. On the other hand, it will show that in cities with grossly polluted water-supplies there is a very considerable mortality from diarrhea and enteritis of children during the winter and spring months.

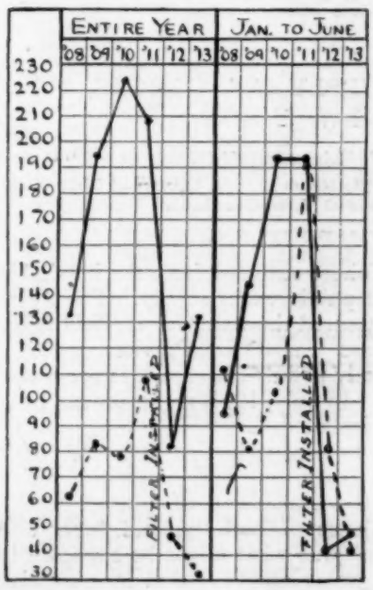

Chart 1.—Annual death-rate per hundred thousand at Cohoes, N. Y. Enteritis is indicated by the solid line and typhoid by the broken line.

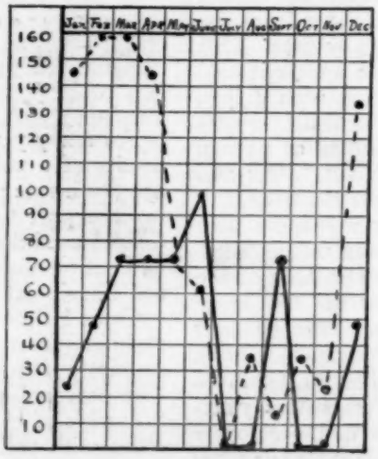

Chart 2.—Annual death-rate per hundred thousand by months at Cohoes, N. Y. The average of typhoid fever during 1908-1911 is indicated by the broken line and the average during 1912-1913 by the solid line.

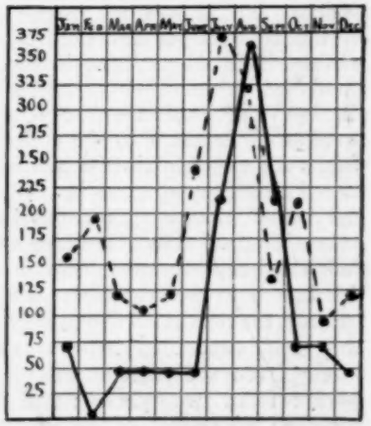

Chart 3.—Annual death-rate per hundred thousand by months at Cohoes, N. Y. The average of enteritis under 2 years during 1908-1911 is indicated by a broken line and the average during 1912-1913 is indicated by a solid line.

Cohoes has the industrial, social and economic conditions which would justify fairly high rates for enteritis in the summer months. In addition, previous to 1912, it possessed rates for enteritis in the winter and spring months which were very high, ranging from 100 to 190 deaths per hundred thousand. Chart 3 shows the striking effect of the filter-plant on these rates. The rate for January fell below 75 and the rates for December, February, March, April, May and June were below 50. The furnishing of filtered water, as might be expected, had little effect on the summer rates, which are probably due to conditions other than water.

It must not be inferred from the foregoing that the results of filtration at Cohoes leave nothing to be desired. Filter-plants are not infallible, fool-proof mechanisms. They are operated by human agency and not always intelligently operated and efficiently controlled, and undoubtedly there are times in the operation of all plants when the purification is inadequate. In dealing with a grossly polluted raw water, a safe effluent is obtained only at the price of eternal vigilance and absolute efficiency at all times. There is such a thing as an unreasonable burden and an unreasonable responsibility for any filter-plant, and the grossly polluted raw water accepted as the burden for many of our filter-plants is like a sword of Damocles, constantly threatening with disaster. The eternal vigilance necessary to prevent the slip which might cause disaster is an imposition of excessive responsibility on any purification plant. The fact that the burden can be borne and under ideal conditions the grossly polluted raw water can be converted into a safe effluent does not justify a *laissez faire* policy in the unrestricted discharge of sewage into the stream.

In streams used as sources of water-supply, sewage treatment should be carried far enough to ensure a raw water at the water-works intakes which would not impose an unreasonable burden or responsibility on the purification plant. By improving the character of the raw water, not only is the "load" on the plant reduced, but also in the case of the inevitable, though perhaps, infrequent accidents an additional safeguard is afforded which the public has a right to demand.

1. McLaughlin, Allan J.: Sewage Polluted Water-Supplies in Relation to Infant Mortality, Pub. Health Rep., reprint No. 77.

Street Accidents in the United Kingdom.—Consul-General John L. Griffiths at London reports that highway accidents have increased rapidly in the United Kingdom since the introduction of motor vehicles, so that, for the year 1913, there were 2,099 deaths and 42,544 injuries. In the city of London proper, which embraces the mile square in the financial section, 17 persons were killed and 1,210 injured. In the metropolitan police district 579 were killed and 18,365 injured. The number of persons injured by motor vehicles other than street railways increased from 560 in 1910 to about 1,200 in 1913.

THE TREATMENT OF FRACTURES BY AUTOPLASTIC BONE PEGS

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When a simple fracture of a long bone is immobilized by external splints in such a position that its medullary canal is patulous, an internal callus is produced across the fracture-line as a part of the process of support and repair of the fracture.

The internal callus ossifies and becomes a medullary plug of bone, aiding in the immobilization and giving support to the fragments during the formation and ossification of the permanent callus.

In the physiologic process of the healing of bone the internal callus is a natural medullary bone splint, remaining as long as its support is required by the injured bone, and then gradually absorbed and the medullary canal reestablished, as the permanent callus becomes effective.

If the processes of Nature were imitated in the open operative treatment of simple fractures by bridging the fractures with autoplastic bone pegs, the non-absorbable foreign body proposition would be eliminated.

In the cases reported, bone-splint material was taken from the tibia of the same individual and pegged across the fracture-line, use being made of the medullary space as a canal when practicable.

The following six cases were selected as types of the series to illustrate the application of the bone peg in simple fractures:

CASE 1.—*Fracture of both bones of the left leg.*—L. K., American, laborer, aged 33, was admitted to Cook County Hospital, Jan. 10, 1914, immediately following injury.

Roentgenoscopy revealed a spiral fracture of the tibia, with ¾ inch of overlapping of fragments, and a slivered impacted fracture of the fibula (Fig. 1). Manipulation and extension failed to reduce the fracture, evidently because of the impaction of the fragments of the fibula.

Fig. 1.—Case 1, after attempted reduction; unreduced spiral fracture of tibia with high-up impacted fracture of fibula.

The patient suffered from delirium tremens for one week, after which an open operation was done and an autoplastic bone splint inserted into the medulla of the tibia across the fracture defect. Reduction could not be accomplished until the fibula was fractured with a chisel on a level with the fracture in the tibia. Material for a bone splint, 3 inches long and ½ inch in width and thickness, without periosteum, was taken from the opposite tibia. The medulla of the upper fragment was cleaned out with a sharp spoon so that the bone splint would slip in very loosely. The leg was bent at an angle at the point of fracture and the bone splint was driven a part of its length into the marrow of the lower fragment of the tibia. The lower fragment, containing the projecting bone peg, was manipulated so that the end of the splint entered the medullary opening of the upper fragment, and the leg was then swung into normal position. Muscular contraction held the fragments firmly together (Fig. 2).

Fig. 2.—Case 1, fifty-eight days after insertion of autoplastic bone splint into the medulla of the tibia; note outline of the bone splint with ample callus between the fragments of the tibia.

Fig. 3.—Case 2; long spiral fracture of the shaft of the humerus.

Fig. 4.—Case 2, forty-one days after operation; note shadow of a 5-inch bone peg in medulla of humerus across the fracture defect.

Fig. 5.—Case 2, fifty-six days after operation; note callus formation apparently following line of spiral.

It was necessary to have the cavity in the upper fragment larger than the bone splint, because the splint could not enter the medullary canal directly in its axis, but must enter in the arc of a circle, the radius of which was equal to the projection of the bone peg above the soft parts, during the manipulation of swinging the lower part of the leg into position.

The patient, when discharged, was walking with a painless, flexible ankle and with a substantial callus at the fracture.

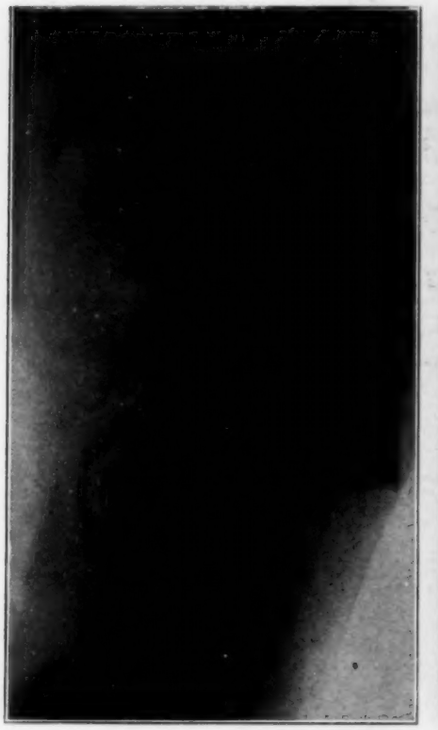


Fig. 6.—Case 3; transverse fracture of shaft of femur with displacement of fragments.

Fig. 7.—Case 3, thirty-one days after operation; note a shadow of the bone peg in the medulla of the femur across the fracture line.

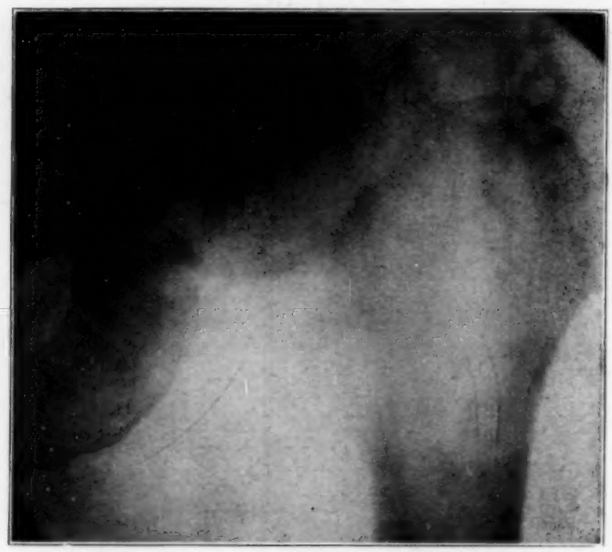


Fig. 8.—Case 4; fracture of the neck of the femur with backward displacement of the upper fragment.

CASE 2.—*Fracture of left humerus.*—O. S., American, clerk, aged 37, was admitted to Cook County Hospital immediately after injury to arm, with angular deformity.

Roentgenoscopy revealed a spiral fracture with a 3-inch defect and with the fragments overriding 1 inch (Fig. 3).

With the same technic as in Case 1 a bone splint taken from the tibia, 5 inches in length and ½ inch in thickness in each direction, without periosteum, was inserted into the medulla of the humerus, each end of the splint projecting into the medullary canal 1 inch beyond the fracture defect (Figs. 4 and 5). Firm union resulted, with palpable callus and perfect bone line, four weeks after operation.

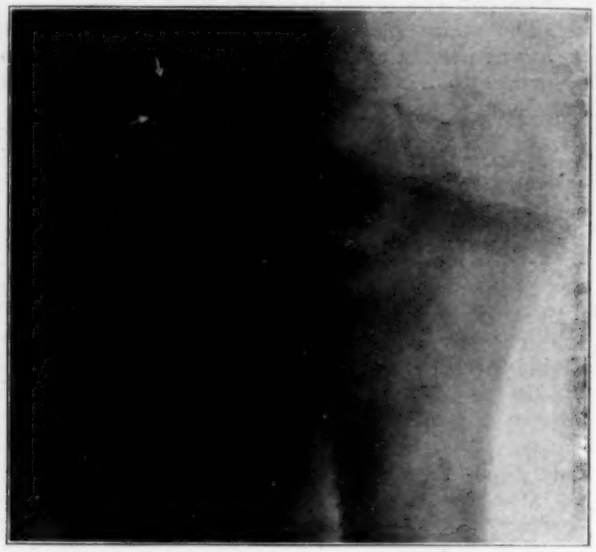


Fig. 9.—Case 4, forty days after operation; note autoplastic bone peg crossing the fracture line in the medulla of the neck of the femur, securely fastening the head and neck to the shaft in their proper alignment and relation.

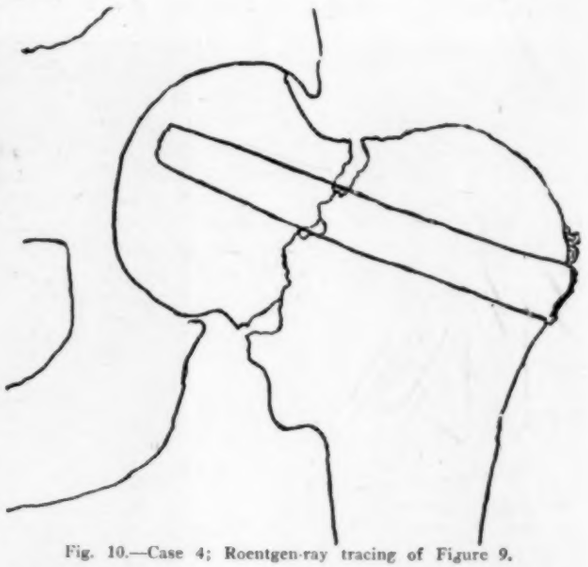


Fig. 10.—Case 4; Roentgen-ray tracing of Figure 9.

CASE 3.—*Fracture of the shaft of right femur.*—R. B., Russian Jewess, housewife, aged 63, was admitted to Cook County Hospital suffering from decubitus and pulmonary congestion of the lungs, following a fracture of the shaft of the right femur. Roentgenoscopy revealed a transverse fracture of the shaft of the femur, with overlapping of fragments (Fig. 6).

With the usual technic an autoplastic bone splint, 3 inches long, was placed at the defect in the medulla of the femur. Because of the precarious condition of the patient, spinal anesthesia was used, and a rapid transfer of bone from the tibia of the same extremity was made without appreciable shock (Fig. 7). Convalescence in the Fowler position was uneventful.

CASE 4.—*Fracture of the neck of the right femur.*—A. S., Swedish cabinet-maker, aged 47, was admitted to Cook County Hospital after injury by direct violence, with Bryant's line 1½ inches short. Roentgenoscopy revealed a fracture of the neck of the femur, with elevation of the great trochanter (Fig. 8).

Under anesthesia the leg was held in an extension apparatus in the position of normal rotation and length. The great trochanter was exposed and an opening made in the outer compact bony wall of the femur in the axis of the neck. Through this opening a small bone curet was passed, following the medulla of the neck of the femur, to line up the fragments, to make a canal to receive the bone peg and to obtain the length of bone required for the splint. A splint 5 inches long was taken from the tibia, the opening in the compact bone opposite the neck of the femur was enlarged to fit the large end of the splint, and it was driven snugly into position until the small end reached the head of the femur (Figs. 9 and 10).

CASE 5.—*Fracture of the right femur.*—W. B., Polish laborer, aged 22, was admitted to University Hospital immediately after injury produced by falling down an elevator shaft. The limb was short 1¼ inches. Roentgenoscopy revealed a transverse fracture of the femur immediately above the lesser trochanter (Fig. 11). Incision over the fracture showed that the upper fragment was rotated and drawn out of position by the muscles attached to the great trochanter. The upper fragment pointed downward, outward and backward, while the lower fragment was drawn up, overlapping the small fragment. The small fragment was held by a clamp while a canal was cut in the axis of the femur shaft, and a bone splint from the tibia fitted to it. The projecting end of the peg was manipulated into the medulla of the lower fragment (Fig. 12).

Fig. 11.—Case 5; transverse intertrochanteric fracture of femur with displacement and overlapping of fragments.

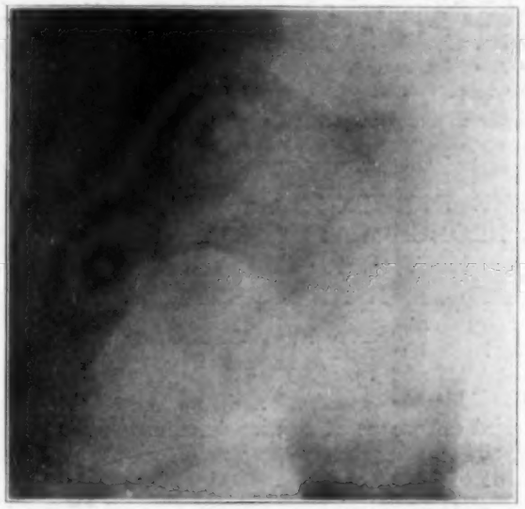
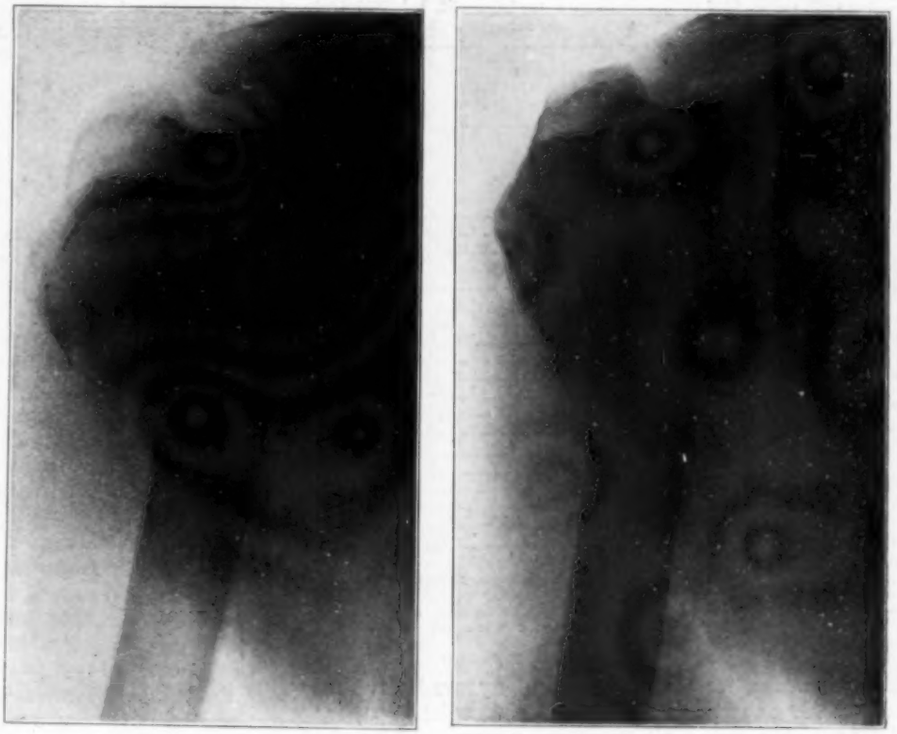


Fig. 12.—Case 5; autoplastic bone peg fastening the neck and great trochanter securely to the shaft in correct rotation and alignment.



Figs. 13 and 14.—Case 6, severely comminuted fracture of the surgical neck of the humerus. To the left, picture taken on admission; to the right, twenty-eight days after operation; note autoplastic bone peg, one end surrounded by callus supporting the cartilage of the head and the other end in the medulla of the shaft of the humerus; mass of splintered bone with callus at outside of fracture.

CASE 6.—*Fracture of the surgical neck of the left humerus.*—J. T., Irishman, cook, aged 49, was admitted to Cook County Hospital with injury to shoulder from falling down-stairs (Fig. 13).

Incision over injury showed the compact bony part of the upper fragment slivered into many small pieces, but attached to the circumference of the cartilage of the head of the humerus and radiating from it. The cancellous bone was fractured transversely at the circumference of the cartilage, leaving the cancellous bone of the concave surface of the cartilage intact. One end of a 2-inch autoplastic bone peg was embedded in the cancellous bone underneath the cartilage of the head of the humerus, and the other end of the peg placed in the medullary canal of the lower fragment, the splint holding the head like the handle of an open umbrella (Fig. 14). Three weeks after operation the patient was using his arm, with the head and shaft of the humerus moving together during rotation and other movements.

31 North State Street.

THE INCIDENCE OF FIBRINOUS AND BRONCHOCATARRHAL PNEUMONIA IN THE PHILADELPHIA GENERAL HOSPITAL*

ROBERT N. WILLSON, M.D.
PHILADELPHIA

Considerable interest and an occasional good-natured difference of opinion have existed during the past eighteen months, as the result of the determination of one of the medical services in the Philadelphia General Hospital to discriminate sharply between the fibrinous and the bronchocatarrhal types of pneumonia, especially with a view to treating patients suffering from the one condition in cold, and from the other in warm, fresh air. During the years 1911, 1912 and 1913, as shown by me in a previous paper,[1] the mortality from all types of pneumonia on the wards was 61.5 per cent. This is a far higher figure than appears justified by the mere fact that alcoholism and privation have both entered into the experience of the patients. Rather more likely would it appear to some of us that a possible cause of this, and of a still higher death-rate to which reference will be made later, has been the indiscriminate placing of all cases of pneumonia in the cold, outdoor air. Fibrinous or bronchocatarrhal pneumonias, in patients old or young, with febrile or subnormal temperatures, strong or weak, have all been started toward the open-air bridges, almost on the run, once the diagnosis of some form of pneumonia has been determined. All, including myself, have participated in what, on second thought may appear to have been an ill-advised procedure. Only within the past year has there been apparent the slightest tendency to retrace the steps from the cold bridge to the warm ward with patients that not only fail to do well, but also suffer manifest harm from the low temperature exposure.

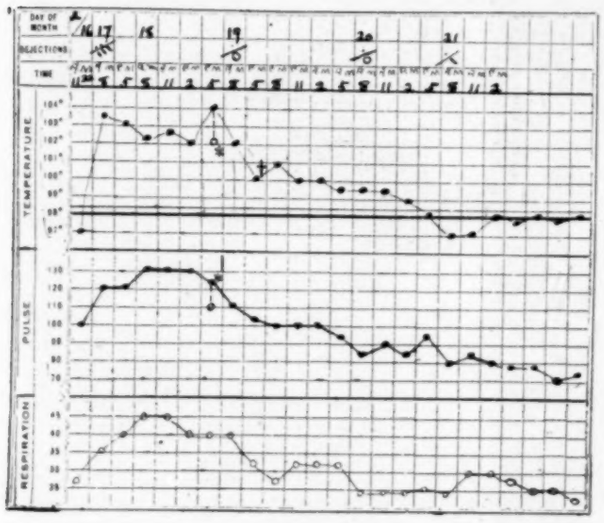


Fig. 1.—Chart in a case of bronchocatarrhal pneumonia in an alcoholic; onset while under observation. Cyanosis, great dyspnea and cough. Patient complained bitterly of the cold outdoor air. Showed immediate improvement and early lysis in the warm air of the ward. Complete recovery. *Sponge. †Axilla.

THE DIAGNOSIS

It will be important at the start to make clear the features which have guided us in the determination of the type of pneumonia in our own cases. In bronchocatarrhal pneumonia we have regarded as first and most important the previous and present state of the patient, usually one of distinct asthenia, often with cardiac dilatation, always with a definite initial bronchitis. Not infrequently is the pneumonic lesion simply an extension process in the course of a bronchiolitis forming part of such a primary condition as influenza, measles, tuberculosis, typhoid fever, food toxemia or small-pox. The heart-muscle in these cases is practically always in distress. Here and there in favorite areas over the lung may be found small foci, exhibiting crackling (subcrepitant) râles, tubular breath-sounds and an impaired percussion note. The most frequent of these chosen sites is perhaps the anterior axillary line on the right, often the left side. Next and most common are the subscapular areas; and last of all, either the pulmonary bases or the apices. Often the process is central, and the physical signs are obscure. Not infrequently, on the other hand, especially if the case is seen late, an entire lung will show massive consolidation from fusion of many peribronchiolar foci. Tubular breathing may be intense and audible over this entire area.

In addition the temperature almost invariably runs an irregular, usually low-grade, sometimes altogether subnormal course. The pulse-rate is high and also characteristically irregular; the impulse is small and mean. The respiratory curve is irregular, but follows no rule. It tends to be low rather than high in rate. The fall of all three, temperature, pulse and respiratory rates, is usually by lysis. Occasionally the pneumonic process will resolve in a day or two and end by crisis. The necropsy, if one is reached, will not always show macroscopically the typical peribronchiolar foci of consolidation, provided these have entered on a stage of extensive coalescence. The microscope will, however, at once betray the inflammatory involvement and thickening of the bronchiolar walls, the minimal quantity of fibrin and the great proportion of epithelial material in both the bronchiolar and vesicular exudate. True fibrinous (croupous) pneumonia needs hardly any description, as it constitutes the old book type of the disease. Only its increasing rarity gives it a special interest. The patient is, as a rule, of a very different type from that just described. He or she is usually of a more or less robust build and of good previous health. Often he has experienced a better physical

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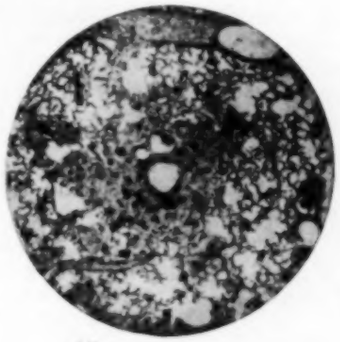
* Read before the College of Physicians of Philadelphia, March 4, 1914.

1. Willson, Robert N.: The Treatment of the Pneumonias, THE JOURNAL A. M. A., Jan. 24, 1914, p. 257.

condition, just prior to the attack, than for a long period. The onset is sudden, is often attended by vomiting, the temperature is high, and remains so fairly constantly throughout the disease. The course is well defined, and usually ends by crisis in seven or nine days. As a rule, an entire lobe is involved, running through the stages of congestion, red hepatization, gray hepatization and resolution, with characteristic physical signs. The right lower lobe is most often involved, not seldom the left lower lobe, and less often the apices. If the case comes to necropsy there will be seen the typical lobar involvement in the stage of either red or gray hepatization. Fibrin plugs may stand out from the alveolar spaces in characteristic fashion. The microscopic examination of a section of lung-tissue will show an entire lack of a bronchiolar or peribronchiolar origin of the disease, and only a minimal proportion of epithelial elements will be present in the exudate, while in their place everywhere are noted fibrin and even organized tissue in the large and small air-spaces.



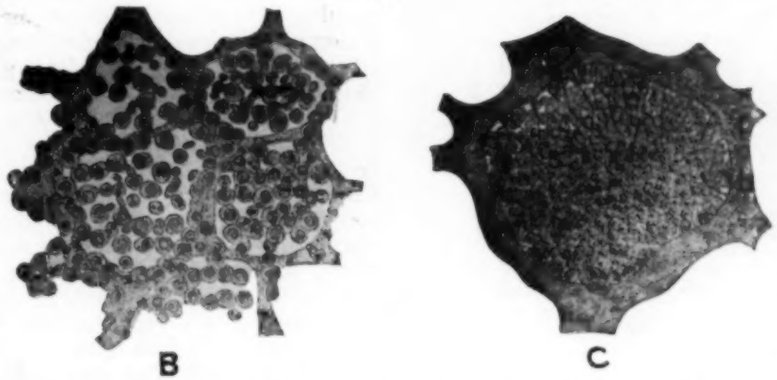


Fig. 2 (reproduced from Delafield).—*A*, An area of peribronchiolar pneumonia. Note the thickened bronchial wall. *B*, The intravesicular exudate in the bronchocatarrhal pneumonia of a child; largely epithelial, little if any fibrin present. *C*, The exudate of acute fibrinous pneumonia showing the fibrin strands, also many pneumococci.

PATIENTS TREATED

During the three years, 1911-1913, there came under treatment in the Philadelphia General Hospital 615 patients[2] with pneumonia of one or the other type. These patients were distributed throughout the various medical services, and experienced varying forms of routine medicinal treatment. Practically every patient was treated outdoors, in the cold, whether the patient's temperature was febrile or subnormal throughout, whether or not the patient was cyanotic and in evident respiratory and cardiac distress, or whether the case was a distinctly sthenic one and the heart and vasomotor system were in satisfactory condition. Whether *post hoc* or *propter hoc* the mortality of this regimen totaled 61.5 per cent.

I have records of sixty-one patients treated on our own service during this period, practically all in the cold, open air, of which thirty-six died and twenty-five recovered, a mortality percentage again of 61.

During the months of January and February, 1914, there were treated on our own medical service nineteen patients with pneumonia, comprising, by an interesting coincidence, a total of nearly half as many patients as were handled by all the other services combined. Of the nineteen patients, the entire number, with one exception, ran a course typical of bronchocatarrhal pneumonia. All patients were treated in as fresh air as possible, on the warm general wards, since a special ward was unobtainable owing to general overcrowding of the institution. Sufficient bedclothing was supplied to the patient to enable him to conserve his heat and energy supply. Sixteen of the number recovered and three died. Two of the latter were nearly moribund on admission, and died shortly thereafter. Another was a negro with an extensive cardiac lesion, probably syphilitic in origin. This patient, a confirmed alcoholic, developed a large pleural effusion, which was removed by aspiration. When seemingly on the road to recovery he suddenly died, probably from pulmonary embolism. No necropsy could be obtained. The mortality in this small but characteristic series was 15.2 per cent.

Practically all of these patients had been addicted to the use of alcohol. The single case of fibrinous pneumonia was in a patient who died within a few hours of admission, and the necropsy showed extensive gray hepatization of the right upper lobe.

During December, January and February, 1914, our single service treated in the warm air twenty-five similar patients with pneumonia, of whom four died, giving a mortality of 16 per cent.

CONCLUSIONS

It would seem as though one were compelled for sheer conscience' sake to examine both his own experience and that of others as to our warrant for believing that the preponderating type of pneumonia, both in the Philadelphia Hospital and out of it, is one originating in a bronchiolar and then a peribronchiolar process. This is important from the point of view of treatment and prognosis. I personally doubt whether there ever has been or ever will be seen a truly sthenic, vitally vigorous sufferer from bronchocatarrhal pneumonia. The very origin of the disease presupposes a bronchitis, in a patient with a lowered vitality. It seems therefore obligatory that we face and answer the question, "Have we really been killing many of our bronchocatarrhal pneumonia patients by treating them as though they were of a sthenic, febrile type?" And again, with all the effectual modern appliances at our command for the supply of warm, clean, air, with the opportunity of washing and rewashing and then resupplying an already used and heated air that has actually been proved cleaner and richer in oxygen for the heart and lungs of the patient than an unwashed outside air — is it not our duty, I ask, to lay hold on these appliances and conveniences and employ them,

2. In previously published figures the nineteen patients discharged in December, 1913, were not included.

not only for the benefit of schoolchildren and theatergoers, but with a view to saving the lives of the sick, and especially of sufferers from the type of toxemia which we call bronchocatarrhal pneumonia?

We stand aghast at such mortality percentages as 61.5 and 61, even in a pneumonia community largely drawn from alcoholic subjects. What then is possible in the premises and what do we aim to accomplish?

I reply, first, that we should insist on a clear-cut discrimination between the two clinical types of pneumonia. Let us forget a little while even the name pneumococcus and the many other causative germs, active singly or in combination in both types of pneumonia, and let us remember the physical principles on which the human vital forces are stored and expended. Let us at least keep those patients indoors who are not vitally able to establish a temperature reaction or a considerable leukocytosis as indications of their attempt to outride the storm that has beset them. Let us wash and warm, and rewash their breathing air a sufficient number of times to render it cleaner and fresher than outdoor air. If modern appliances are unattainable through either a short-sighted or mis-

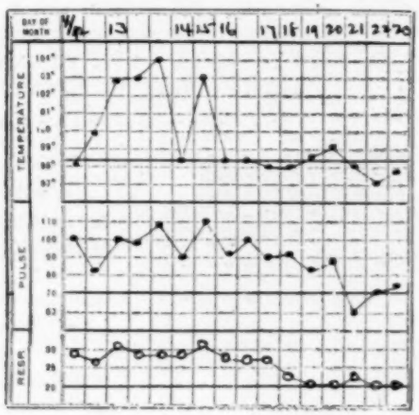


Fig. 3.—Chart in a case of bronchocatarrhal pneumonia in an alcoholic, who suffered and experienced an exaggeration of all symptoms in the cold air, and a prompt betterment when returned to the warm air, an early crisis, and recovery.

guided economy on the part of those who furnish the funds that equip such a great municipal life conserver or Juggernaut as the Philadelphia General Hospital — and it can be made to fill either rôle — if the necessary appliances are still unattainable, I repeat, then let us hold our asthenic pneumonia patients on the general medical wards, and watch the percentage of recoveries rise and the mortality fall, as indicated in the small but suggestive 1914 series to which I have made passing reference. Let us send outdoors only such febrile pneumonics as crave the cold, and obtain a stimulus and a relief in and from it; and let us send even these back into the warmth, when the crisis occurs, or when for any reason they are distressed by the low temperature and appear pinched and blue from undue exposure to cold.

Under the new regimen we have ceased expecting death as the likely outcome of pneumonia of either type, even in the alcoholic. On the contrary, we feel a grave sense of responsibility and disappointment if such a case does not end in recovery.

1827 Spruce Street.

THE ETIOLOGY OF TYPHUS FEVER (AND OF BRILL'S DISEASE). PRELIMINARY COMMUNICATION *

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NEW YORK

Basing my opinion on some theoretical considerations and on previous investigations, I considered it advisable to search for an anaerobic organism as the etiologic factor in the acute infectious disease of unknown origin which Brill differentiated from typhoid fever. By the use of anaerobic methods in six cases of Brill's disease, I obtained the same organism in five; the case in which the organism was not obtained was investigated only after the crisis. Inasmuch as studies made during the past few years have shown that Brill's disease is probably a mild form of typhus fever, I decided to apply the same methods to the study of the latter. Through the kindness of Dr. Joseph O'Connell, health officer of the port of New York, to whom I am deeply indebted, I was enabled to study six cases of typhus fever at the height of the disease, and from all of these I recovered an organism that appears to be identical with that isolated from the cases of Brill's disease. A large number of control cases was studied and the organism was absent from each.

The organism is a small, Gram-positive, pleomorphic bacillus, from 0.9 to 1.93 microns in length, the breadth being from one-fifth to three-fifths of the length. It is not acid-fast, has no capsule, and polar bodies can be demonstrated with appropriate methods. The organism when first isolated grows only anaerobically, but after a time it can be grown aerobically.

Complement-fixation tests were made by Dr. P. K. Olitsky and myself, using the serum of eight cases of typhus fever and antigens made up from organisms obtained both from cases of Brill's disease and typhus fever. Complement-fixation reactions were negative during the course of the disease, but at or after the crisis, fixation was found to be present in varying degrees in six out of eight cases. The antigen made from the bacillus obtained from the cases of Brill's disease binds the complement in the same manner as the antigen made from the bacillus isolated from the cases of typhus fever. Complement-fixation tests were made in thirty-six control cases with absolutely negative results.

Intraperitoneal inoculation of a pure culture of the organism into guinea-pigs produced a rise of temperature in from twenty-four to forty-eight hours, the temperature remaining high for four or five days, and then dropping by crisis. This corresponds to the reaction seen in guinea-pigs after inoculation with defibrinated blood from typhus fever patients, except that the incubation period is shorter. Serum from a convalescing typhus patient was proved to have bactericidal properties against the organism obtained from Brill's disease and typhus fever.

In a later communication it is proposed to consider the cultural characteristics of the organism, its agglutination reactions, the further results of animal experiments and cross immunity tests. At the same time the results of studies forming a basis for a possible vaccine prophylaxis, and comparative studies of other organisms described by various authors as being found in typhus fever, will be reported.

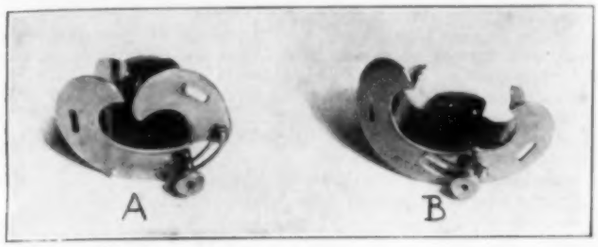
* From the Pathological Laboratory, Mt. Sinai Hospital.

New Instruments and Suggestions

MODIFICATION OF THE BROPHY MOUTH-GAG

R. E. FARR, M.D., MINNEAPOLIS

Having had some difficulty in introducing the Brophy mouth-gag, I have had the hinge attachment made, as illustrated. It will be noted that the modified instrument is adjustable. When it is closed, as at *A* in the illustration, it is much



Modified Brophy mouth-gag; *A*, closed; *B*, opened widely.

more easily introduced into the patient's mouth, and it may be opened to the ordinary width, or even much wider, as illustrated at *B*.

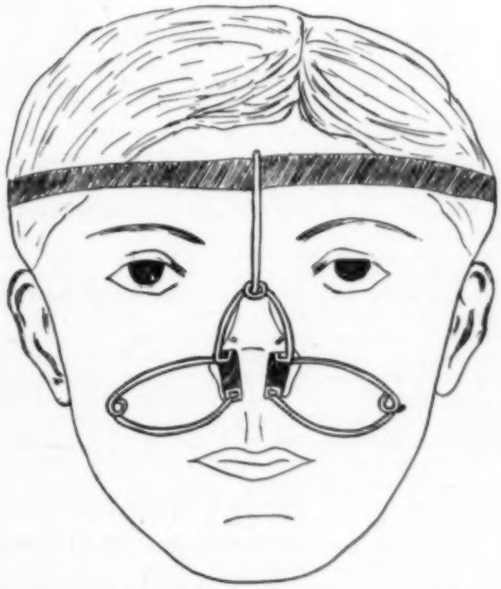
Another advantage is that two of these modified instruments will answer the requirements, whereas with the original instrument, a set of four was necessary.

Suite 301, Reid Corner.

A NEW, DOUBLE, SELF-RETAINING NASAL SPECULUM

MAX UNGER, M.D., NEW YORK

The speculum which I have devised fulfils all the requirements of the ideal speculum in being small, simple, and complete, in dilating both nostrils at the same time, in staying in place, and in not interfering with the operator. So great an aid is it to the surgeon that the time of a submucous resection operation is shortened at least one-quarter.



Nasal speculum.

My speculum is made entirely of spring wire and consists of two pairs of fenestrated blades, one pair for each nostril. Each blade is about ¼ by ½ inch in size. The free border is slightly wider than the attached. The outer ends of the blades are fastened to the ends of a wire coil. The wires between the blades and the coils are bent back almost to a right angle, to approximate the cheek. The upper blades are also fastened to the lengthened ends of another coiled spring, which rises straight up in front of the nose for about 1½ inches. To this coil is fastened a small hook, the loose end of which passes over a tape across the forehead. The side coils dilate the nostrils anteroposteriorly, while the upper coil dilates them laterally. The hook serves to tilt the end of the nose up and to steady the instrument. The whole speculum is about 3 inches wide and about 2½ inches high.

1045 Fox Street.

ILLUMINATION OF THE DEEPER CAVITIES

C. E. TENNANT, M.D., DENVER

There is need for better illumination of the deeper cavities and recesses of the body during examination and operation. Various devices have been used from time to time, some of which have proved unpractical because of the small area exposed at one time, others because of connecting wires and uncertain strength of current delivered to the lamp.

Fig. 1.—Device for illuminating the deeper cavities.

For several years past I have been utilizing the cystoscope for study of the thoracic cavity in connection with my method of operation and treatment of empyema. The results thus far have been quite satisfactory in locating pus pockets and fibrous bands, which, unless destroyed, prevent full expansion of the lung and obliteration of the pyogenic space.

Fig. 2.—The same, with lamp secured into end of tube.

Recently while performing the suprapubic cystotomy with retractors and a well-exposed bladder interior, the need for better light prompted me to devise a method of illumination which has since proved very satisfactory.

As shown by the accompanying illustrations, this device consists of a 7-inch soft annealed tube extension, the base of which is seated against the battery by screwing it into the regular lamp socket of the battery case. A high candle-power miniature tungsten lamp is secured into the end of the soft extension tube. Its cost is trifling, and as the shaft is readily

bent in any desired position, its general utility must be apparent. Both the shaft and the lamp may be sterilized in solutions, or the lamp may be so treated and the shaft boiled. The metal case which covers the storage battery or dry cell is covered with sterile gauze, or a sterile muslin sheath, made to fit, is drawn over the case before it is placed with the other instruments. This affords perfect and safe control of the instrument.

The device so arranged gives excellent illumination in all cases in which deep ocular inspection is desired during the course of the operation. This lamp is also of value in the transillumination of the stomach, gall-bladder, biliary ducts, duodenum and other hollow viscera. The instrument has been made for me by the Paul V. Muckle Instrument Company of Denver.

612 Empire Building.

A PERMANENT PREPARATION OF UREASE, AND ITS USE FOR RAPID AND ACCURATE DETERMINATION OF UREA*

Donald D. Van Slyke and Glenn E. Cullen, New York

The procedure described below permits any one with rudimentary laboratory experience to complete within half an hour an accurate determination of the urea content of the urine, blood or spinal fluid. The apparatus required consists merely of test-tubes, burets and a suction-pump such as can be attached to any tap with fair water-pressure.

The methods for urea determination have until recently been of two classes, dependent respectively on either (1) the hypobromite reaction, or (2) the principle of transforming the urea into ammonia by heating to 150 C. (302 F.) in acid solution. The hypobromite methods are notoriously inaccurate. The heating methods, particularly that of S. R. Benedict, are, for urine at least, accurate, but not suited for use outside of a laboratory.

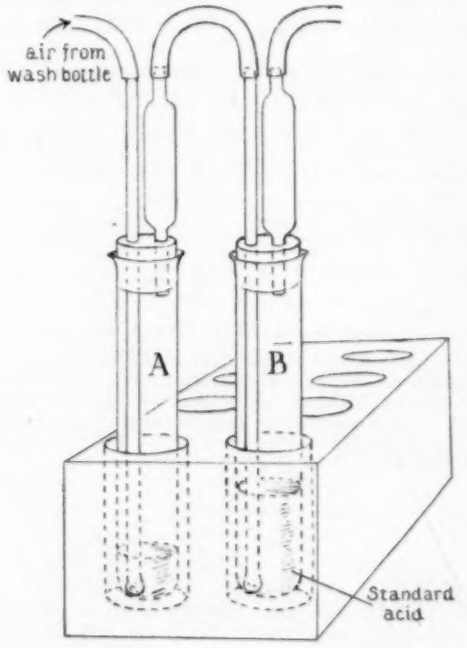
Marshall has recently introduced a third principle which offers an opportunity for obtaining results equal in accuracy to the best laboratory methods, with a technic almost as simple as that of the hypobromite procedure. Marshall utilized an enzyme, urease, discovered in 1909 by Takeuchi in the water extract of the soja or soy bean, which converts urea into ammonium carbonate. It acts at room temperature, forms ammonia from nothing except urea, and is not interfered with by glucose or anything else likely to be encountered in physiologic fluids. Marshall's extract has, however, two disadvantages compared with the chemical reagents available: it requires a number of hours to react quantitatively, and it loses its activity on standing.

These disadvantages have been overcome by the preparation of the enzyme in the form of a soluble and very active dry powder. Soja bean meal is extracted with 5 parts of water and the extract poured into 10 volumes of acetone. The precipitate containing the enzyme is dried, and obtained as a powder which maintains its activity indefinitely. The enzyme prepared in this form can be obtained from the Arlington Chemical Company, of Yonkers, N. Y.

Properties of the Urease.—The enzyme preparation dissolves readily in water, forming an opalescent solution. Under given conditions, a given amount of it will decompose a definite amount of urea per minute, and no more, regardless of how much excess urea may be present. The preparation is most active at a temperature of approximately 55 C. (131 F.) and in a perfectly neutral solution. Between 10 and 50 C. (50 and 122 F.), increasing the temperature over any 10 degree interval doubles the rate at which the preparation acts. Heavy metals, or acid in a relatively slight concentration, destroy the activity. The urease is not quite so sensitive toward an alkaline reaction, but its activity is decreased by even weak bases. Ammonium carbonate depresses the activity to about one-eighth the optimum, so that the action of the enzyme is self-retarding. The retarding effect of the ammonium carbonate formed can be neutralized and conditions for optimum activity obtained by the addition of potassium dihydrogen phosphate (potassium acid phosphate, KH_2PO_4), and dipotassium hydrogen phosphate (neutral potassium phosphate, K_2HPO_4), in equimolecular proportions. This phosphate mixture also acts as a stabilizer to solutions of enzyme. While the latter ordinarily begin to lose strength rapidly after from one to five days, a solution containing 10 per cent. of the enzyme preparation in 0.2 molecular KH_2PO_4=K_2HPO_4 lost only 3 per cent. of its activity in three weeks when kept under toluene at from 25 to 30 C. (77 to 86 F.) in a place exposed daily to direct sunlight.

Preparation of Enzyme Solution.—Two gm. of the enzyme preparation, 0.6 gm. of dipotassium hydrogen phosphate, and 0.4 gm. of potassium dihydrogen phosphate are stirred up with a rod in 10 c.c. of water. The enzyme preparation dissolves in about a minute, forming an opalescent solution. A few floccules of insoluble matter may remain, but the active enzyme all goes into solution at once. The urease can be obtained from the manufacturers in 1-gm. portions already mixed with the proper amounts of phosphate, so that it is merely necessary to dissolve the mixture in 10 c.c. of water. The acid phosphate serves a double purpose: it accelerates the enzyme action, and renders the enzyme solution more stable. If the latter is covered with toluene it will ordinarily hold its activity for a fortnight, but it is safer to use fresh solutions.

Analysis of Human Urine.—The procedure consists in treating the urine sample with urease, aerating the ammonia formed into fiftieth-normal acid, and titrating back the excess acid.



Apparatus for determining the urea content by means of urease.

The details are carried out as follows:

1. Dilute 5 c.c. urine to 50 c.c.
2. Measure into Tube A 5 c.c. diluted urine, 1 c.c. enzyme solution, 1 drop caprylic alcohol.
3. Close A with stopper shown in figure, and let stand fifteen minutes for enzyme to act.
4. Measure into tube B 25 c.c. fiftieth normal hydrochloric acid or sulphuric acid, 1 drop 1 per cent. sodium alizarinate indicator, 1 drop caprylic alcohol.

Connect A and B as shown in figure.

5. At the end of fifteen minutes pass the air-current as indicated for one-half minute.
6. Then open A and pour in 4 to 5 gm. of dry potassium carbonate measured from a spoon.
7. Close A at once and aerate again till all ammonia is driven over into the acid in B.
8. Titrate excess acid in B with fiftieth-normal sodium hydroxid.

The caprylic alcohol (Kahlbaum's "Octylalkohol, Sekundär I") serves to prevent foaming during the aeration. The purpose of the preliminary half-minute aeration (paragraph 5 above) is to drive over into the acid in B any ammonia that may have escaped from the urine into the air space in A. The time required for the final aeration depends on the rate at which the air-current is passed through the solutions,

* From the Laboratories of the Rockefeller Institute for Medical Research.

and must be determined by trial for the particular pump or pressure system that is utilized. With a central vacuum, pressure, or an efficient pump which will give as rapid a current as the apparatus will stand, it is possible to drive off all the ammonia in five minutes, while with a slow pump half an hour may be necessary. The number of cubic centimeters of fiftieth-normal acid neutralized by the ammonia (i.e. 25 minus the c.c. of alkali used in Process 8) is multiplied by the factor 0.056 to give the number of grams of urea plus ammonia nitrogen per hundred cubic centimeters of urine. The ammonia alone may be determined at the same time with the ammonia plus urea, using the same technic, except that 5 c.c. of *undiluted* urine, no urease, and the factor 0.0056 are used for determination of the ammonia nitrogen alone. The ammonia tubes are connected in series with those for the urea determination, using the same air current for all. One can run as many as eight pairs of tubes in series on one current, taking care only to disconnect the series in the middle, to prevent back suction, before the pump is disconnected.

Determination of Urea in Blood, Spinal Fluid, etc.—The urease is particularly valuable in permitting a simple and accurate determination of urea in the blood, because its action is so specific that it attacks none of the other constituents, and the blood has to undergo no preliminary treatment for removal of the latter. Three c.c. of fresh blood or fluid, measured wth an accurate pipet, are run into a 100-c.c. test-tube containing 1 c.c. of 3 per cent. potassium citrate, to prevent clotting; 0.5 c.c. of the urease solution and 2 or 3 drops of caprylic alcohol are added. After ten minutes 5 c.c. of saturated potassium carbonate solution are added, the ammonia is driven by aeration into 15 c.c. of hundredth-normal acid, and the excess acid is titrated back with hundredth-normal sodium hydroxid. Each cubic centimeter of hundredth-normal acid neutralized indicates 0.01 per cent. (grams per hundred cubic centimeters) of urea in the blood, or 0.00467 per cent. of urea nitrogen. In case the blood should be one of the rare samples containing over 0.15 per cent. of urea, all the acid will be neutralized, and it will be necessary to repeat the determination, using a sample of only 1 c.c. Fresh blood contains so little ammonia that it can be disregarded.

Technic of Aeration.—The technic is essentially that of Folin, with some minor alterations to adapt it to the somewhat changed conditions. The tubes do not have to stand heat, and consequently can be made of very heavy and durable glass. A convenient holder (shown in the illustration) for them is easily made from a block of wood 9 by 5 by 4 inches, by drilling in it eight holes, each 1⅛ inches in diameter and 3 inches deep.

To prevent foaming, caprylic alcohol is by far the most efficient agent with which we are acquainted. With it one has no trouble at all, even in very rapid aeration of blood. In its absence one can use amyl alcohol or kerosene, although these do not guarantee the same immunity from annoyance and lost analyses. In view of the small amounts of caprylic alcohol required (from 2 to 5 drops for an analysis) its use is not expensive.

The inlet tube for air should always reach to the bottom of the solution.

The most convenient rubber tubing for the connections is the thick-walled, soft stethoscope tubing.

The apparatus, arranged as shown in the accompanying illustration, is so simple that it can be made in a laboratory, but can be obtained, with the block holder shown, suction pump, and a set of especially heavy test-tubes, from Emil Greiner & Co., 45 Cliff Street, New York.

In connection with the subject the following references will prove of interest:

Takeuchi: *Jour. Coll. Agric.*, Tokyo, 1909, Part 1.
Armstrong: *Proc. Roy. Soc.*, 1912, lxxxv, Series B, p. 109; lxxxvi, 328, 561, 1913.
Marshall: *Jour. Biol. Chem.*, 1913, xiv, 283; 1913, xv, 487.
Folin: *Jour. Biol. Chem.*, 1912, xi, 493.
Van Slyke and Cullen: Preliminary reports, *Proc. Soc. Exper. Biol. and Med.*, Dec. 17, 1913; *Proc. Soc. Biol. Chem.*, Dec. 29, 1913.

Distribution of Sexes in Manila.—In Manila males greatly exceed females in number. At present there are 149,397 males as against 131,608 four years ago, and 117,546 females as against 102,801 four years ago, that is, about 32,000 more males than females. There are only 3,626 widowers in Manila, while the number of widows is 10,961. Prosperous conditions offering good employment account for the movement to the metropolis of the islands.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

EREPTON.—Erepton is a product prepared by the digestion of meat and consisting largely of the amino-acids thus produced. One hundred Gm. of erepton contains about 12 Gm. of nitrogen (the exact nitrogen content is stated on each package) in a form which does not give the biuret reaction.

Actions and Uses.—Erepton is said to be capable of supplying the nitrogen requirements of the animal organism. It is claimed to be non-toxic and non-irritating and to be satisfactorily absorbed when introduced into the rectum. Erepton is said to be useful in cases in which it is necessary to substitute a perfectly digested food for the product of natural digestion in cases of gastric or intestinal indigestion and for the purposes of rectal alimentation.

Dosage.—Erepton is usually administered as a nutrient enema in a solution having the temperature of the body. It may be used from three to four times daily. The following prescription is best adapted for the purpose:

Erepton	20.0 Gm. (⅔ ounce)
Pure maltose	20.0 Gm. (⅔ ounce)
Water	200.0 Gm. (7 ounces)

Should it appear desirable, 10 Gm. (150 grains) of fat may be added to the preceding in the form of olive-oil or butter. Erepton may be given in porridges, vegetables or soups.

Manufactured by Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany (Farbwerke-Hoechst Co., New York). No U. S. patent. U. S. trademark No. 88,403.

Erepton is prepared by the successive action of pepsin-hydrochloric acid, trypsin and erepsin on meat freed from fat and tendon; the end-product is then desiccated.

Erepton is a brownish, hygroscopic powder, easily soluble in water and having an odor and taste suggestive of meat extract.

SEROBACTERINS.—(See THE JOURNAL, Feb. 7, 1914, p. 457.) The Council has at present no means of determining the identity and purity of serobacterins; they must be used on the guarantee of the manufacturer alone and they must be used, therefore, with due caution.

H. K. Mulford Co., Philadelphia.

Acne Serobacterin, Mulford (Sensitized Acne Vaccine, Polyvalent).—Marketed in packages of four syringes, graduated as follows: Syringe A, 100 million killed sensitized acne bacilli, Syringe B, 200 million killed sensitized acne bacilli; Syringe C, 400 million killed sensitized acne bacilli; Syringe D, 800 million killed sensitized acne bacilli.

Coli Serobacterin, Mulford (Sensitized Coli Vaccine).—Each package contains four syringes of Coli Serobacterin graduated as follows: Syringe A, 250 million killed sensitized *Bacillus coli;* Syringe B, 500 million killed sensitized *Bacillus coli;* Syringe C, 1,000 million killed sensitized *Bacillus coli;* Syringe D, 2,000 million killed sensitized *Bacillus coli.*

Neisser Serobacterin, Mulford (Sensitized Gonococcic Vaccine).—Each package contains four syringes of Neisser serobacterin graduated as follows: Syringe A, 250 million killed sensitized gonococci; Syringe B, 500 million killed sensitized gonococci; Syringe C, 1,000 million killed sensitized gonococci; Syringe D, 2,000 million killed sensitized gonococci.

Pneumo Serobacterin, Mulford (Sensitized Pneumococcic Vaccine).—Each package contains four syringes of Pneumo Serobacterin graduated as follows: Syringe A, 250 million killed sensitized pneumococci; Syringe B, 500 million killed sensitized pneumococci; Syringe C, 1,000 million killed sensitized pneumococci; Syringe D, 2,000 million killed sensitized pneumococci.

Staphylo Acne Serobacterin, Mulford (Sensitized Staphylo Acne Vaccine).—Each package contains four syringes of Staphylo Acne Serobacterin graduated as follows: Syringe A, 500 million killed sensitized staphylococci, 100 million killed sensitized acne bacilli; Syringe B, 1,000 million killed sensitized staphylococci, 200 million killed sensitized acne bacilli; Syringe C, 2,000 million killed sensitized staphylococci, 400 million killed sensitized acne bacilli; Syringe D, 4,000 million killed sensitized staphylococci, 800 million killed sensitized acne bacilli.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 16, 1914

ALBUMINURIA FOLLOWING INGESTION OF PHENOLPHTHALEIN

Doubtless few drugs in the entire Pharmacopeia enjoy such wide-spread use as substances included in the cathartic group. The common laxatives are as familiar to the layman as they are to the physician, and are everywhere advertised and employed with characteristic "supreme indifference" to the possibility of harm, and for the most part in ignorance of the real action of the individual drug. If the layman elects to take his bodily welfare into his own hands he must be satisfied to bear the consequences that may follow from lack of expert knowledge; but the physician ought to appreciate the limitations of the procedures which he employs, the possible dangers which they may involve, and those idiosyncrasies of the individual which call for discrimination and judgment in therapeutic practice.

Scarcely more than a decade ago, quite by accident, the apparently harmless drug phenolphthalein came into use as a laxative, and in all parts of the world speedily found favor with patient and physician alike, even before the real pharmacology of the substance had been adequately worked out. Its use seemed to be attended with no noticeable irritation of the enteric tract. The early theory was that it acted as a cathartic, not by provoking peristalsis, but by exciting a hypersecretion of fluid in the intestine. Statements implying the non-toxicity of phenolphthalein and the absence of deleterious action therefrom on the kidneys are current. A recent report from the laboratories of bacteriology and physiologic chemistry at the Jefferson Medical College in Philadelphia[1] comes, therefore, as somewhat of a surprise. In twenty experiments, in each of which, before beginning the trials, the subject's urine showed no trace of albumin by delicate tests, a twenty-four-hour specimen, collected after the administration of phenolphthalein in a from 1-grain to 2-grain dose, gave positive tests for the protein in every case. The amount of albumin varied from a trace up to 0.25 per cent. by Esbach's quantitative method. The precipitate in many of the cases was tested and found to be insoluble in alcohol. Traces of phenolphthalein were demonstrated in the urine. The albuminuria lasted from one to three days.

In experiments on the lower animals — cats, in this instance—no demonstrable phenolphthalein or albumin appeared in the urine after the administration of large doses. The kidneys showed no pathologic changes on microscopic examination. Hydrick concludes from an examination of the feces as well as from the condition of the alimentary canal after ingestion of the drug, that because its alkali salt is an irritant, it produces purgation by (1) irritation of the intestinal mucous membrane by the unabsorbed portion, and (2) stimulation of the intestinal nerve-plexuses which regulate peristalsis by the absorbed portion of the drug. If the facts here recorded for man are substantiated by further investigation they cannot be neglected in any consideration of the choice of suitable laxatives to meet individual needs. A case of poisoning from taking 1 gm. (15 grains) of phenolphthalein has been reported.[2] It would be unjust, however, seriously to condemn a widely used and apparently satisfactory drug until the statistics leave no alternative.

1. Hydrick, J. L.: Albuminuria Following Ingestion of Phenolphthalein, Proc. Am. Soc. Biol., Chem., Jour. Biol. Chem., 1914, xvii, p. xxxvi.

2. See A Handbook of Useful Drugs, 1913, p. 104.

THE MEDICAL ASPECT OF CHILD LABOR

In his recent article on "The Underlying Factors in the Spread of Tuberculosis," Francine[3] emphasizes the social and economic conditions underlying this disease and refers to the recent studies of Baldwin which show that tuberculosis is the most common infection of childhood. The campaign against tuberculosis in children must be waged against any cause of a lowered resistance which may permit the latent disease to become active. That child labor, unless adequately safeguarded, may have this result is asserted by Ludwig Teleky[4] in an article on the choice of occupation for wage-earning children.

Since its foundation by the University of Vienna, Teleky has been docent of the chair of social medicine. As industrial hygiene is the most important branch of this subject, he early became interested in tuberculosis as an industrial disease, and logically was led to study the effects of different occupations on wage-earning children with a predisposition to this disease. He found that in Germany as well as in Austria there is an unduly high tuberculosis-rate among youthful wage-earners. Kayserling has shown that while in Berlin the tuberculosis death-rate for all the later years of life has fallen since 1900, no diminution has been found in the death-rate for children of wage-

3. Francine, Albert Philip: The Underlying Factors in the Spread of Tuberculosis, The Journal A. M. A., March 7, 1914, p. 767.

4. Teleký, Ludwig: Fürsorge bei der Berufswahl mit Rücksicht auf die Tuberkulose, Wien. klin. Wchnschr., 1913, xxvi, 421.

earning age. Von Pirquet attributes the rise in the tuberculosis morbidity-rate during the years between 15 and 20 to overstrain and undernutrition in apprenticeship life.

At the beginning of his investigation Teleky found little literature concerning the effect of different occupations on the health of children, and he remarks with some bitterness that European physicians have paid far more attention to the effect on the health of children of overwork in school than to the effect of industrial work, a statement which sounds strange to American ears. Evidently European schoolchildren work much harder than American children. From the Vienna Sickness Insurance Bureau, however, Teleky was able to gather statistics which show clearly the increase of sickness among children who leave school for work. The increase of sickness during the first year of work is not great, but in the second and third years it is pronounced, and even the fourth year is higher than the first.

He then took up the question of control of the choice of occupation so that some regard might be given to the welfare of the child, and underdeveloped children, predisposed to tuberculosis, might be kept out of occupations in which too great demands were made on their strength. In Vienna medical control of such matters is easier than with us, because of the well-established system of apprenticeship. Most industries employ physicians, who examine applicants for apprenticeships and may reject the physically unfit. Theoretically, this is a good system, but Teleky has found it ineffective in practice. The physicians are almost obliged to accept or reject applicants according to the state of the labor market. Also, the best-paid industries get the strongest boys, while weaker boys must accept lower wages and poorer conditions or go into the unskilled occupations, which means that the children who most need it are not protected.

Realizing that the choice of occupation should be made during school life and with the advice of teacher and doctor, Teleky, with the cooperation of other physicians, opened a consultation clinic for schoolchildren and their parents, in which advice was given as to the occupation for which the child was fitted. After three and a half years' experience, in spite of every effort, including wide advertising in labor journals, he states that only three hundred boys have been brought to his clinic. This discouraging feature, however, may be explained by the still more discouraging fact of his inability to provide for those who did consult him. Here, as he says, practice and theory part company. What occupation should be advised for an underdeveloped boy plainly predisposed to tuberculosis? The medical books, of course, declare that such boys should be given no indoor occupation and no work which causes physical overstrain, or in which the posture is not frequently changed. After many years spent in visiting industrial establishments in Vienna, Teleky found only two such occupations available—ornamental (not market) gardening, and forestry. He also discovered that in these two fields of labor not enough positions existed in all Austria to give employment to the underdeveloped children found in a single one of the working-class quarters of Vienna.

Disease is produced in working children not only by improper conditions of labor—heat, dust, insufficient light, stagnant air—but also by the work itself—the physical overstrain placed on an underdeveloped organism which should have its energies conserved for growth. After studying the problem at first hand, and seeing all efforts to prevent the disastrous effect of labor on underdeveloped children fail, Teleky finds no remedy save the raising of the age-limit for employment. The age of 16, he thinks, is early enough for children to enter industrial work; and even at 16 the transition from school life to industrial life should not be too abrupt, lest the shock to the youthful organism be too great. He agrees with Kaup that for the youth under 18 the work-day should be limited to ten hours, including time for three meals, with each week at least three half holidays for study and sport, and each year a two weeks' vacation.

HOOKWORM ANEMIA

Although the presence of one or both of two species of parasitic worms—the New World hookworm, *Necator americanus* or the Old World *Ankylostoma duodenale*—is universally accepted as the primary etiologic factor in the hookworm disease of man, one of the most conspicuous symptoms, namely, the hookworm anemia, is by no means satisfactorily determined. Opinion is still to a large extent empirical on this feature of ankylostomiasis. It was early assumed that the habits of the worms in biting and attaching themselves to the alimentary wall would lead to hemorrhages, and that the resulting loss of blood would account for the characteristic anemia. Examination of the small intestines in suitable cases has often revealed a diffuse catarrh of variable severity; there may be large spots of hemorrhagic infiltration each with a worm hanging to its center; hemorrhages may or may not be present. It does not follow, however, that the worms suck blood. Looss,[1] for example, insists that their natural food is the intestinal epithelium, and that although blood is not infrequently found in the intestine of the worms, the red corpuscles are not digested to any extent.

Undoubtedly, the parasites of ankylostomiasis injure in several ways. The considerations just advanced,

1. Looss, A.: The Anatomy and Life History of *Agchylostoma duodenale*, Records of the Cairo School of Medicine, 1911, iv, 163.

along with others of a more general nature, have led to the promulgation of the toxin theory of the disease. Nicoll[2] has recently summarized the arguments with regard to the two principal theories. On the one hand, it has been believed that the worm itself secretes a toxic substance, the action of which gives rise to the anemia; on the other, the more recent idea is that the hypothetical toxin is produced by some extraneous organisms such as intestinal bacteria, the products from which find their way through the damaged mucosa. Numerous attempts have been made to isolate a hemolytic or otherwise harmful substance, with varying success.[3] The greatest objection to be raised against the theory of secondary microbic invasion is the rapidity with which the anemia disappears on expulsion of the worms. Perhaps we shall not take an extreme position if we tentatively conclude, in the light of the conflicting evidence now available,[4] that several factors such as toxins, intestinal lesions and hemorrhages, rather than a single condition, contribute to produce the clinical picture of the disease.

If the hookworm anemia were induced by a loss of blood associated solely with the injury to the alimentary wall, the anemia would evidently be of a secondary or hemorrhagic type. Boycott and Haldane[5] have contended that the blood-content differs from that in secondary anemias. Clinically, the leading feature of hookworm anemia in man is the chronic and progressive nature of the disease, although the progress in some cases may be very rapid. The usual description indicates that the symptoms are those of severe anemia, generally associated with some degree of gastroenteritis. The individual symptoms which may occur, though numerous, are not specifically characteristic of hookworm anemia. In the pallor and edema, we are told, there is a greater resemblance to chlorosis than to pernicious anemia.

At the Lister Institute of Preventive Medicine in London, Dr. William Nicoll[2] has attempted to investigate, under careful experimental conditions, some of the alleged blood-changes in ankylostomiasis. The dog, which was used as the subject, harbors a hookworm *Ankylostoma caninum*, distinct from that of man. The hookworm anemia of dogs differs from the corresponding disease in man in two essential particulars, namely, that young animals are chiefly affected and that in them a fatal termination comes much more rapidly. Older dogs, although not altogether insusceptible, acquire only a moderate infection and, consequently, a minor degree of anemia. From this they gradually recover, even in spite of repeated and continued attempts at reinfection. The anemia observed in young dogs was characterized by great loss of weight, emaciation, prostration and intestinal hemorrhage, but in no case was epistaxis observed. The blood volume of dogs suffering from the minor degree of hookworm anemia is not materially altered, except, perhaps, it is somewhat diminished. The oxygen capacity of the blood per unit of body-weight is also, on the average, somewhat decreased. Infection is generally accompanied by distinct though not profuse hemorrhage, which is most marked in the early stages, but tends to disappear. Eosinophilia was not a constant sign either of infection or of disease. Evidence of blood regeneration was furnished by the appearance of large numbers of erythroblasts (normoblasts) which increased with the progress of the disease.

Cats are much less easily infected than dogs, and monkeys as well as human beings were found to be insusceptible to the hookworm peculiar to the dog. The experiments thus disprove the theory that the dog, either by harboring the human parasite or by the dissemination of its own, may be the carrier of hookworm infection to man.

2. Nicoll, W.: The Blood Volume in Ankylostomiasis, with Some Biological Notes Relating to the Disease, Jour. Hyg., 1914, xiii, 369.

3. Loeb, L., and Smith, A. J.: The Presence of a Substance Inhibiting the Coagulation of the Blood in Ankylostoma, Proc. Path. Soc., Philadelphia, 1904, vii, 173; Ueber eine die blutgerinnungshemmende Substanz in Ankylostoma caninum, Centralbl. f. Bakteriol., Orig., 1906, xl, 738. Loeb, L.: Ein weiterer Versuch über die blutgerinnungshemmende Substanz in Ankylostoma caninum, ibid., 1906, xl, 740. Liefmann, H.: Beitrag zum Studium der Ankylostomiasis; über den Infectionsmodus und die vermutliche Giftwirkung der Würmer, Ztschr. f. Hyg. u. Infectionskrankh., 1905, l, 359. Preti, L.: Haemolytische Wirkung von Ankylostoma Duodenale, München. med. Wchnschr., 1908, lv, 436. Noe, F.: Etude sur l'ankylostomiase, etc., en Cochinchine, Ann. de l'Inst. Pasteur, 1908, xxii, 896. Whipple, G. H.: Ankylostomiasis, Bull. Johns Hopkins Hosp., 1908, xx, 152; The Presence of a Weak Haemolysin in the Hook-Worm and Its Relation to the Anaemia of Uncinariasis, Jour. Exper. Med., 1909, xi, 331.

4. In addition to the references already given, consult Weinberg, M., and Leger, M.: Recherches cliniques et expérimentelles sur l'ankylostomiase, Bull. Soc. Path. exot., 1908, i, 229. Siccardi, P. D.: Pathogénie de l'anémie ankylostomienne Arch. de Parasitol., 1910, xiii, 555. Castanelli, A.: Ankylostomiasis Fever, Jour. Trop. Med. and Hyg., 1910, xiii, 253.

5. Boycott, A. E., and Haldane, J. S.: An Outbreak of Ankylostomiasis in England, Jour. Hyg., 1903, iii, 95.

OYSTERS AND TYPHOID FEVER

There are seasons of the year when the instances of infection with the organism of typhoid fever can usually be traced with considerable ease to their probable source. Epidemiologic study long ago demonstrated that the greater outbreaks are usually due to infected water, milk or other foods, and it came to be seen that the smaller groups and isolated cases could best be explained by contact infection. The carrier has been shown to be the link between hitherto unconnected cases. For many years no form of air infection (except dust) has been said to be a cause of typhoid, and the reports of outbreaks of dust-borne typhoid fever in the Spanish and Boer wars and in India are based on the flimsiest evidence.[1]

We have not forgotten the ubiquitous house-fly as a frequent carrier of disease. In many of our states, however, insects of this type are excluded as effective agents of infection because of the climate during the colder months of the year, so that we cannot fall back on the convenient hypothesis of "transmission by flies"

1. Chapin, C. V.: The Air as a Vehicle of Infection, THE JOURNAL A. M. A., Feb. 7, 1914, p. 423.

to explain the incidence of typhoid fever. Ever since Conn's report indicating the occurrence of cases of typhoid fever in epidemic form as the result of the use of oysters contaminated with sewage,[2] there has been a growing tendency to attribute the origin of much of the winter typhoid fever in certain districts to sewage-polluted bivalves.

It is time to ascertain whether this attitude toward the oyster is justified by the facts. Oysters are a highly prized article of diet wherever they are obtainable. Despite the increasing enforcement of rigid regulations concerning the vending of oysters that are free from pollution according to the standards of such representative bodies as the Bureau of Chemistry of the United States Department of Agriculture and the Rhode Island Shell-Fish Commission, the prejudice against this food-product has, justly or unjustly, increased in many quarters. To consider only the alleged responsibility of the oyster in the causation of winter typhoid, we may ask what its biologic habits are at this season. Gorham[3] has shown that during cold weather oysters rest or hibernate; the ciliary movement ceases and feeding does not occur, and the oysters become practically free from sewage organisms, even when lying on sewage-polluted beds.

As such facts seem to throw some doubt on the wisdom of attributing winter typhoid to the oyster, Joseph[4] has made a bacteriologic study of the oysters sold in Baltimore. The aim of this investigation, conducted in the Laboratory of Hygiene and Bacteriology at the Johns Hopkins University, was to ascertain whether the oysters sold in one of the most prominent markets for these products in the United States contain organisms derived from the intestinal tract, and whether their content in bacteria varies with the seasons of the year.

Obviously, the presence of micro-organisms characteristic of water was to be expected; and these have no significance in this connection. The bacterial findings indicated that the oysters sold in Baltimore are in general free from sewage contamination. Those few lots which would be condemned by the most rigid standards were obtained at times of the year when the weather was quite warm — a fact of no little significance in view of the tendency to prolong the oyster-eating season beyond the limits of the colder months. One of the most striking points brought out was the distinct change in the character of the oysters, according to the time of the year. Thus in the early fall the scores were high, in the cold weather of the midwinter low, and again high in the spring. There was a distinct correlation between the number of bacteria in each oyster and the number of gas-producing species. This seems to indicate that the increase of bacteria which the various oysters show is in large part due to a multiplication of the intestinal organisms and not to an increase of the ordinary water species. The specific types isolated in the unsatisfactory lots include *Bacillus coli* and *B. cloacae*, which are surely indicative of sewage pollution, *B. alkaligenes* and certain rarer intestinal species: *B. oxygenes, B. oxyphilus, B. chymogenes* and *B. chylogenes*. On no occasion were organisms of the type of *Bacillus typhosus* or *Bacillus paratyphosus* encountered.

2. Conn, H. W.: Med. Rec., 1894, xlvi, 471.
3. Gorham, F. P.: Am. Jour. Pub. Health, 1912, ii, 24.
4. Joseph, M.: Bacteriological Findings in Baltimore Oysters, Johns Hopkins Hosp. Bull., 1914, xxv, 128.

Current Comment

TYPHOID PREVENTION AMONG SEAMEN

In an open letter, Surgeon-General Rupert Blue calls attention[1] to the fact that during the fiscal year ending June 30, 1913, 392 cases of typhoid fever among seamen employed aboard United States merchant vessels were admitted to the United States marine hospitals. As in addition to this number many other patients are known to have been treated at various other hospitals and at their homes, it is evident that the incidence of typhoid fever among the personnel of our merchant marine is high. This might be expected in view of their exposure and rather irregular lives. The occurrence of the disease among these men, however, is a special danger and of great importance not only for the seamen and shipping interests, but also for the public at large. The surgeon-general calculates that, taking two and a half months as a fairly low average of the actual loss of working time during typhoid fever, and a dollar and a half as the average daily wage of the employee, the aggregate loss is some eighty years in actual working time and $44,000 in wages. "In terms of cold dollars and cents alone this is a rather heavy price to pay for an entirely preventable disease." Furthermore, each patient may become a focus for the spread of the disease or a source of no little subsequent danger even after recovery as a possible "carrier." "Carriers" on board vessels are particularly dangerous as they are an ever-present menace to fellow shipmates and to passengers. In shifting from port to port the seaman "carrier" may become a traveling focus of infection and an active agent in the spread of the disease. The War and Navy departments have very largely reduced—indeed, almost obliterated—the incidence of typhoid fever by the introduction of preventive inoculations. The French in Algiers and Morocco have found typhoid preventive inoculations of such great value that in these countries troops which formerly suffered severely from the ravages of the disease are now comparatively free from it. Indeed, from a positive scourge the affection has become almost a negligible incident of military life. Similar favorable experiences with preventive inoculations are reported from other countries. So far, preventive inoculations for typhoid have been used only in military and naval

1. Blue, Rupert: Public Health Reps., March 20, 1914, p. 677.

circles and in hospital work among physicians and nurses. The results have been so favorable that it would seem to be time to secure the introduction of the practice of typhoid immunization to the public. Nowhere does a better opportunity exist to test it than among the United States seamen of the merchant service. Navigation on the lakes is now just about to open and this is the best possible time to show how much may be accomplished in preventing disorganization of traffic and financial loss from the occasional epidemics of typhoid fever that have occurred in spite of precautions. This can surely and easily be done by the institution of typhoid inoculation. Surgeon-General Blue concludes his open letter by saying that "the United States Public Health Service is ready and willing to render every assistance and advice, and at all relief stations throughout the country service officers are instructed to administer the typhoid prophylactic to all sailors applying for same."

THE SPREAD OF TRACHOMA

During the past few years reports regarding trachoma among the reservation Indians and the mountain population of Kentucky and other states have stimulated interest in this disease. Investigation has shown that it affects many communities, to a greater or less extent, existing in a number of instances among schoolchildren. Attention has been directed to the great industrial establishments where large numbers of foreign laborers are employed. In each instance, when a focus of the disease has been found, its origin has been carefully investigated so that preventive measures might be instituted. J. W. Schereschewsky of the Public Health Service has examined the 5,962 employees of the Youngstown (Ohio) Sheet & Tube Company with reference to the prevalence of trachoma. He found among them seventy-six cases, a rate of prevalence of 1.3 per cent. Nineteen cases of suspicious conjunctivitis were also observed. Of the employees 28.5 per cent. were Americans. Among the 1,700 Americans the rate of prevalence was 0.23 per cent., and among the seven foreign nations represented the rate ranged from 0.9 to 3.0. After careful inquiry as to the time these men had been in the United States, Schereschewsky expresses the opinion that with but few exceptions the disease was contracted subsequent to landing in this country, and in the great majority of instances while the men were employed in East Youngstown. It was not thought that the disease had been spread to any great extent by conditions in the mills. Close physical contact and the use of the common towel and hand basin are known to be favorable to the spread of trachoma, but these conditions do not prevail in the works of the company. Most of the foreigners do not wash in the mills, and those Americans of the skilled labor class who do, have their own buckets or vessels and towels. One possible source of infection in the mills is the habit of the workmen of removing from each other's eyes foreign bodies that may lodge therein, although they are instructed to apply to the medical service for relief. Attention was directed to the living conditions of the workers, and here Schereschewsky discovered the chief source of infection. Many of the lodging-houses of the workers were much overcrowded. Thus, in one instance twenty-three lodgers were found in a four-room house, as many as ten or twelve in one room. Insanitary conditions prevailed in East Youngstown as well as in the immediate surroundings of the men. The presence of recent cases showed that the disease was gradually spreading from foci of chronic cases in a state of acute exacerbation, some of which Schereschewsky observed. In most instances, perhaps, as at East Youngstown, the cases are among laborers from foreign countries who have been in the United States a comparatively short time. The inspection at the ports of entry serves to detect practically all cases that have reached a stage at which diagnosis is possible; an immigrant when he lands may have the infection in such an undeveloped state that it cannot be detected and he may then in a short time become a focus for the spread of the disease. The employers of labor in the great industrial establishments should be warned of the seriousness of trachoma, and especially of its liability to spread. The health authorities of the cities and towns where these establishments are located should realize their responsibility in this matter. Bad housing, overcrowding and lax personal and community hygiene will contribute to the spread of this highly infectious and disabling but wholly preventable disease.

OPTIMISM

To look on the bright side of life and its affairs with an enthusiastic belief that everything is all right and for the best is ideal. This is especially true as it applies to those who come into contact with the sick. A physician, above all men, should be an optimist — ready to stimulate hope even though he may not have it himself. Hopefulness in the countenance and optimism in the words and actions of the physician are as sunshine in the sick-room; they stimulate hopefulness of recovery in the sick and a courage that often has potent influence for good. Even when recovery is not possible, good, not harm, is done. They make life worth living while it lasts. The psychic influence is always felt so long as consciousness remains. Paget,[1] speaking of hypochondriacs, says, "Your chances of doing good will depend mainly on the skill with which you can influence the patient's mind; for of the components of his case the mental condition is the worst."

1. Paget's Essays, p. 43.

An Obligation.—Hygiene, in its broadest interpretation, includes man's welfare in its totality. Health promotion because of this is a social obligation—"for no man liveth to himself alone." The physician no longer bears the burden of protection or prevention. Insanitary conditions are due to the sins of the community and the sins of the individual, yet the individual bears a responsibility. His obligation is twofold. The municipality may provide pure food and sanitary environments, but the individual is responsible for personal effort to keep himself hygienically fit.—Dowling, in *Bull. Texas State Board of Health.*

Medical News

CALIFORNIA

Personal.—Dr. Edward C. Rosenow of the Memorial Institute of Infectious Diseases, Chicago, delivered an address before the Los Angeles County Medical Association, May 7, on "The Transmutation of Streptococci."——Dr. Elbridge J. Best, San Francisco, was operated on for appendicitis in St. Luke's Hospital, April 26, and is reported to be doing well.

Physician Urged for Governor.—The executive committee of the Young Men's Republican Club of Los Angeles on May 4 adopted a resolution addressed to the Young Republican League of California expressing confidence in the honor, integrity and ability of Dr. Norman Bridge, and requesting him to become a candidate for the office of governor of California on the Republican ticket.

IOWA

Epileptic Colony Site Accepted.—The State Board of Control has notified the owners of the site near Woodward, selected for the epileptic colony site, that the options on the land are accepted. The tract includes 952 acres, and was bought at an average price of $194 an acre.

Personal.—Dr. Guilford H. Sumner, Des Moines, secretary of the State Board of Health, has received two gavels made from white oak from the Abraham Lincoln flag-pole raised at Swede Point, Iowa. The gavels are intended for the meetings of the State Board of Health and the State Board of Medical Examiners.——Dr. and Mrs. Benjamin E. Niebel, Iowa City, have started for China where Dr. Niebel has been assigned as medical missionary.——Dr. and Mrs. Louis Savre, Osage, sailed for Europe April 28.

ILLINOIS

Personal.—Dr. Lewis C. Taylor has been elected president and a director of the Springfield Anti-Tuberculosis Association, Dr. George F. Stericker a member of the executive committee, and Dr. George Thomas Palmer, medical director.

Illinois State Conference of Charities and Corrections.—The proceedings of the eighteenth annual conference held in Rockford in October have been published in the *Institution Quarterly*, the official organ of the public charity services of Illinois, for the first quarter, dated March 31, 1914. In addition to the record of routine business of the conference the publication contains the complete papers and addresses of the meeting on a large number of subjects of social and charitable endeavor, not the least interesting and important of which are those on eugenics, the teaching of sex hygiene, and those on social insurance. The conference was said to have been one of the most successful in the history of the state charities organization and was participated in by some of the most prominent sociologic and charity workers in the United States. The publication also contains an account of the winter (1914) meeting of the State Hospitals Medical Association and of the annual meeting of the Illinois State Association for the Prevention of Tuberculosis.

Chicago

Chicago Leper Deported.—Charles Walgren, a native of Sweden, who was taken to the Cook County Hospital in February, suffering from leprosy, was returned to Sweden, May 6. That every precaution might be taken, he was sent to New York in a special car, and was given a special compartment on the steamer.

Award of Ricketts Prize.—The Howard Taylor Ricketts prize for undergraduate research work, awarded May 3 each year to a student of Rush Medical College, as a memorial of the death of Howard Taylor Ricketts while engaged in the investigation of typhus fever in Mexico City, has this year been awarded to Julian Herman Lewis.

Rush Medical College Limits Enrolment.—Official word has been received that at a recent meeting the faculty of Rush Medical College determined to limit the enrolment of students hereafter to 100 students each for the first and second year classes and 120 students each for the third and fourth year classes. This action has been deemed necessary since the college feels that it can provide the best medical training for classes of that size.

Memorial Institute Occupies New Building.—The Memorial Institute for Infectious Diseases has moved into its new building at 629 South Wood Street, adjoining the Annie W. Durand Hospital which is conducted by the institute. The new building is equipped with laboratories for the individual workers, a department for the serum division and preparation and animal rooms which are unique in construction and arrangement. The *Journal of Infectious Diseases* will also use the new building as headquarters and all communications should be sent to the new address.

Health Committee Takes Up Vice Question.—A new factor has entered into the fight against the social evil in Chicago. The health committee of the city council has voted to hold a public hearing on the recommendations of the vice commission. The health committee last year interested itself in several important matters which, while not recognized by council custom as health subjects, bore on health topics sufficiently to offer an excuse for it to stir up beneficial action. Among these were the garbage problem, the Maxwell Street market investigation, and the quack advertising campaign. So far as is remembered, it is the first time official Chicago had taken up the social evil as a health problem. It is expected that important action will result from this new arrangement.

Nursing Service at County Hospital.—The Illinois Training School which has supplied the nursing force for the county hospital for thirty-three years is managed gratis by some of the most influential and reputable women in Chicago. Some of its bills to the county have been questioned recently by the state's attorney and his assistants. In reply, Mrs. Ira Couch Wood, president of the school, has said that if bills are not paid the school will withdraw from the county hospital. The hospital will then be practically forced into closing. Mrs. Wood and other directors of the school were compelled to borrow $5,000 to meet the expense of the institution—to buy food and pay salaries. The April bill of the school has been held up by the county board. Although officially, no reason has been given it is believed to be due to the fact that the state's attorney in a long opinion asserts the school has been overpaid.

Upholding the Validity of the Milk Ordinance.—The validity of the Chicago milk ordinance which was attacked by certain milk dealers has been upheld by the supreme court of the state. The milk dealers objected to the provision of the ordinance relating to the installation of recording thermometers on all pasteurizing machines, such thermometers to be under the control of the commissioner of health. Their application for a permanent injunction against the health commissioner was denied. An appeal was taken to the supreme court in which the validity of the ordinance was attacked on account of its alleged unreasonable, unjust and oppressive provisions. The *Bulletin* of the Chicago School of Sanitary Instruction, May 2, in commenting on this decision says that the supreme court in denying the injunction upholds the principles on which the ordinance was based and quotes from the decision as follows: "The city having the power to require milk to be pasteurized is not limited to the imposition of a penalty for a violation of this requirement, but may prescribe the conditions under which the pasteurization shall be done in order to prevent an evasion of the ordinance and insure that the product shall be such as the ordinance requires." The court, taking judicial notice of the importance of pure milk as affecting the public health, further says: "The regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends through all the processes of transportation, preservation and delivery to the consumer. Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome and free from bacilli of any disease, they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness and freedom from disease shall be secured and made to appear."

The Coroner's Report.—In his biennial report Mr. Peter M. Hoffmann, coroner of Cook County, calls attention to the frequency of deaths from poison due to grasping a wrong bottle. In 1913 there were at least 148 deaths from this cause. The coroner points out the increase in poisoning in the following tabulation:

	1910	1911	1912	1913
Accidental	127	103	110	148
Suicidal	116	115	153	163
Undetermined	65	66	61	64
Water heaters	4	7	10	1
Total	312	291	334	376

He recommends a law prohibiting the use of any but porcupine or serrated bottles and prescribing certain colors and shapes for various tablets. Another feature of the report is a tabulation of the sudden and violent deaths by occupations. This gives an estimate of the number of persons engaged in the various trades and the number of inquests held. Also there is added a percentage column which is referred to as the hazard of the employment. This column gives the number of inquests per 1,000 of persons employed in the 191 listed trades. The figures relate to only one year—1913—and, therefore, are claimed to be indicative only.

The twenty-eight listed by the coroner's report as the most hazardous with the number per 1,000 are as follows:

Steeple jack	20.	Foreman	5.94
Switchman	15.93	Sailor	5.71
Aviator	13.33	Acrobat	5.55
Watchman	12.35	Policeman	5.13
Porter	10.	Hostler	5.
Tender	8.33	Miner	5.
Teamster	8.	Blacksmith	4.71
Yardmaster	7.50	Laborer	4.63
Infants	7.27	Car inspector	4.28
Pilot	6.66	Towerman	4.16
Roofer	6.66	Painter	4.4
Window washer	6.66	Peddler	4.40
Oiler	6.25	Patternmaker	3.75
Actor	6.	Waitress	3.66

The coroner makes a plea to employers for more efficient safeguards to protect those in "extra hazardous employments."

LOUISIANA

Tuberculosis Camp.—Dr. Oscar Dowling announces that the State Board of Health is now considering a 1,200-acre tract in Rapides Parish, and also a tract in St. Tammany Parish, on which to establish a state tuberculosis camp.

Reporting Notifiable Diseases.—By an amendment to the sanitary code of Louisiana, dated April 24, 1914, physicians are required to report notifiable diseases both to the state health officer and to the local board of health. Such reports are to be made within twenty-four hours.

Arrival of Mexican Refugees.—Up to April 28, about 300 refugees from Mexico had landed at the quarantine station near New Orleans. The British steamer *Wyvisbrook* landed 100 from Progresso April 26; the *Livingston* brought 13 from Frontera April 27, and the United States Collier *Jason* landed 260 from Vera Cruz April 28. All were held in strict quarantine regulations for six days on account of the prevalence of yellow fever and small-pox in Mexico.

MARYLAND

Cordell Memorial Fund.—A movement is on foot to start a fund, the proceeds of which are to be used to erect a tablet to the memory of Dr. Eugene Fontenoy Cordell, for many years the Maryland correspondent for THE JOURNAL. Subscriptions may be sent to Dr. Nathan Winslow, 608 Professional Building, Baltimore.

Campaign for Mercy Hospital Ends.—The campaign to raise $320,000 for Mercy Hospital, which began two weeks ago, has come to a close with contributions aggregating $120,948.96. Pledges for assistance within the year have been given members of the committee and their plans will no doubt be fully carried out within a year or two.

Fined for Medical Violation.—That a serious view of violations of the medical laws of Maryland is being taken was indicated when the court inflicted the maximum penalty on Leon Schatz, the proprietor of the Philips Medical Institute, who was fined $200 and costs. Schatz, who is not a registered physician, was said by Dr. Herbert Harlan, president of the Board of Medical Examiners, to have been an especially dangerous violator of the medical laws.

Personal.—Dr. Hiram Woods, Baltimore, has been appointed a member of the Board of State Aid and Charities. ——Dr. Henry Barton Jacobs, Baltimore, was elected secretary of the National Association for the Study and Prevention of Tuberculosis at the annual meeting of the association held in Washington.——Dr. William H. Scruggs, Jr., of the staff of the state sanatorium, Sabillasville, has declined the position of second assistant physician to the Massachusetts State Hospital for Tuberculosis, Lakeville. ——Dr. Hampson H. Biedler, Baltimore, has been seriously ill with ptomain poisoning.

MISSOURI

Annual Sociability Dinner.—The annual sociability dinner of the St. Joseph-Buchanan-Andrews County Medical Society was held May 6. The guest of honor was Dr. Bransford Lewis, St. Louis, who delivered an illustrated lecture after the dinner.

St. Louis

Personal.—Dr. Henry M. Whelpley of the Missouri Historical Society delivered an illustrated lecture on "Mounds and Mound Builders of Illinois," before the Chicago Historical Society, April 23.

New Buildings for Isolation Hospital.—An ordinance has been passed, authorizing the erection of two new wards for the Isolation Hospital, to be located between the sanatorium and the infirmary.

Psycho-Educational Clinic.—A department was created by the Board of Education, April 13, to be known as the Psycho-Educational Clinic. This clinic will be located at the Harris Teachers' College. The work of the clinic will consist of the examination of subnormal children, and the suggesting of a modified course of study for these unfortunates.

Summer School of Medicine.—St. Louis University announces summer school of medicine and science to be in session from June 1 to July 11. The work of the school is adjusted to the needs of physicians, medical students, students preparing to study medicine and teachers. No course will be given with less than three students, and two courses in college or laboratory work will constitute full work. For the fundamental courses, the laboratories of the university will be utilized. For detailed information regarding these courses address Dr. Daniel M. Schoemaker, 1406 S. Grand Avenue.

NEW YORK

Scarlet Fever in Hempstead.—The Board of Health closed three public schools in Hempstead, L. I., on May 7, because of an outbreak of scarlet fever, nine cases having been reported within a week. It is rumored that there were a number of cases not reported.

Personal.—Dr. Henry T. Williams was unanimously reelected president of the Rochester Health Association.—— Dr Raymond Sanderson, Canandaigua, has been appointed pathologist of Ulster County.——Dr. William J. Prish, Fredonia, is reported to be ill with small-pox.

County Laboratory Opened.—The new laboratory for Onandaga County opened May 1, with Dr. C. Grace Carroll in charge. The laboratory was heretofore in the charge of the Syracuse Bureau of Health. The work will include examinations of microscopic specimens, cultures, etc., for physicians, and also examinations of water and milk.

Syracuse Health Bulletin.—The first monthly bulletin of the Syracuse Bureau of Health appeared May 4. Infant welfare was the chief topic of interest. "Efficiency First, Safety Alway and Courtesy to All," is given as the motto of the bureau. Two maps of the city were shown, one of which indicated by shading the location of recorded births during 1913, the other in a similar way showing the location of deaths among infants.

Farm Home for Inebriates.—Under the law of June 20, 1910, providing for a board of inebriety of the state of New York, steps have been taken to establish a farm home for the treatment and care of such persons. A farm has been purchased in Orange County which includes a portion of Wickham Lake, and work has been begun on the institution, which is to be on the cottage plan. About 250 inmates will be provided for at first and the plans at present are intended to accommodate 800. Massachusetts is the only other state which has provided an establishment especially designed for the care of inebriates. The board has just issued its report for 1913.

New York City

Another Case of Typhus Arrives.—A well developed case of typhus fever was discovered among the passengers of the Greek steamship *Ioannina*. Of the 508 steerage passengers all had been allowed to land but 100 before the fever victim was discovered. These 100 were detained on Ellis Island.

Changes in Faculty.—Dr. Frederick Peterson has resigned his position as professor of psychiatry at Columbia University. Dr. J. Ramsey Hunt has resigned as associate professor of neurology to take effect on June 30, and Dr. Frederick Tilney, now associate in anatomy, has been appointed to succeed him.

Bathing Suits Must Be Sterilized.—The Board of Health has issued rules governing bathing beaches. These rules

require that all bathing apparel in public bath houses shall be sterilized every time after they have been used and that water from wells at such resorts shall not be used for drinking purposes until analysis by the Board of Health shows that it is free from danger of contagion.

More Small-Pox.—On May 4 another case of small-pox was reported to the Board of Health, and the following day three additional cases were reported from the same house. This makes in all 18 cases that have been reported thus far this year. Coincident with the order of the Health Department requiring that the 138,853 children in the parochial schools of this city be vaccinated, Charles M. Higgins, treasurer of the Anti-Vaccination League of America, has published an advertisement warning parents not to have their children vaccinated or revaccinated under "any form of compulsion, intimidation or coercion, or through any false panic created by medical individuals or societies, professionally interested in vaccination."

Proposes Medical Supervision for All.—Dr. Sigismund S. Goldwater, commissioner of health, proposes a method of medical supervision which would call for periodical physical examination of every individual in the city and the instruction of laymen in elemental hygiene. The records of the department show that victims of diseases like cancer, heart and kidney disease, etc., consult a physician on an average one year too late for remedial measures to be of value. In insurance companies and large corporations where the plan has been tried good results are being reported. Dr. Goldwater points out that through the division of child hygiene school children are kept under such supervision and there is no good reason why the plan should not be extended to include all. He proposes that the examinations shall be paid for by those able to pay and be free to all others.

NORTH CAROLINA

Personal.—Dr. Samuel W. Stevenson, Mooresville, is reported to be seriously ill as a result of a cerebral hemorrhage.——Dr. Benjamin E. Washburn, Raleigh, who has been engaged in the hookworm work for several years, has become whole-time health officer of Nash County.

Abandon Sanatorium Plan.—On account of the widespread opposition to the location of a sanatorium for tuberculosis in what is known as the tourists' zone around Asheville, Drs. William L. Dunn, Charles L. Minor and G. R. Moale have abandoned their project for the establishment of a sanatorium to cost $250,000. The Board of Trade and other citizens of Asheville are reported to have purchased the property which it was proposed to use for the sanatorium plant.

Opening of Park View Hospital Announced.—The formal opening on June 1 of Park View Hospital, Rocky Mount, is announced. It is intended to care for all medical and surgical cases, other than acute infections. The official staff is composed of Drs. J. P. Whitehead, Richard H. Speight, Jr., Emile B. Quillian and Joe P. Speight, all of Rocky Mount, Drs. George Ben. Johnson and A. Murat Willis, Richmond, Va., are also announced as consulting surgeons. Dr. Edmund S. Boice, late of Richmond, Va., will be house physician.

OHIO

Meningitis in Cleveland.—Thirteen cases of cerebrospinal meningitis were reported in Cleveland during April. Ten deaths occurred.

State Association Meeting.—At the sixty-ninth annual meeting of the Ohio State Medical Association in Columbus, May 5-7, the following officers were elected: president, Dr. John H. J. Upham, Columbus; president-elect, Dr. William E. Lower, Cleveland; secretary-treasurer, Dr. Clarence D. Selby, Toledo (reelected); councillors, first district, Dr. Robert Carothers, Cincinnati; sixth district, Dr. T. Clark Miller, Massillon; ninth district, Dr. Joseph S. Rarden, Portsmouth; delegates to the American Medical Association, Drs. Clarence D. Selby, Toledo; Jacob A. Kimmel, Findlay, and James C. M. Floyd, Steubenville; alternates, Drs. Jacob E. Tuckerman, Cleveland; Sidney Lange, Cincinnati, and George F. Zinninger, Canton. Cincinnati was selected as the meeting place for 1915.

Organization of Advertising Quacks in Ohio.—According to the Ohio State Medical Journal, April, 1914, the advertising doctors of Ohio have an organization known as the Ohio Medical Advertising Association. The purpose of the association, as stated in its constitution, is to protect its members from prosecutions, chiefly by the State Medical Board for revocation of their licenses. Its membership includes representatives of a number of medical cults. In a letter asking for funds, the statement is made that both the Ohio State Medical Board and the American Medical Association are prosecuting advertising quacks. A test case is now pending in the courts of Ohio which involves the revocation of the licenses of L. W. Hunt of Toledo and Dr. Graham of Columbus. No limit is placed on the amount of fund that may be raised for the fighting of prosecutions as the constitution provides that pro-rata assessments may be ordered to pay all expenses. Smith Bennett, an attorney formerly employed by the State Medical Board, has been retained as their counsel.

Cincinnati

Personal.—Dr. Walter E. List, assistant superintendent of the Longview Hospital, has been appointed to a similar position in the Cincinnati City Hospital.——Dr. Charles L. Bonifield has been elected president and Dr. Frank E. Fee, secretary-treasurer of the Ohio State Clinical Association.——Dr. Louis Stricker has been appointed assistant clerk, to examine applicants for the blind relief fund.——Dr. E. Hertoghe, a member of the Royal Academy of Medicine, Antwerp, was the guest of Dr. B. Merrill Ricketts and Dr. Charles T. Souther at a dinner April 25. In the evening Dr. Hertoghe delivered an illustrated lecture on "Cretinism" in the amphitheater of the City Hospital.

PENNSYLVANIA

Personal.—Dr. Ellis M. Frost has been appointed director of health of the University of Pittsburgh, and not of the Department of Health of Pittsburgh, as announced in the issue of May 9.——Dr. Samuel P. Glover, Altoona, has returned from abroad.

Reorganization of Health Department.—May 4 the new Department of Health of Chester assumed charge of health affairs of the city, equipped with police power, so that it can take immediate action without having to give ten days' notice as formerly. Dr. W. Knowles Evans is to be chief of the department.

Tuberculosis Conference.—The fourth annual conference of the Pennsylvania Tuberculosis Workers was held at the Bellevue-Stratford Hotel, May 6. The morning session was presided over by Dr. Frank A. Craig, Philadelphia, and Dr. William C. White of Pittsburgh presided over the afternoon meeting. Alexander M. Wilson, assistant director of the Department of Health and Charities, advocated the building of tuberculosis hospitals by the city and urged the establishment of day camps. Dr. Meyer Solis-Cohen urged that the city park have self-supporting day and night camps, where tubercular patients might rest and live in the sun and air, in fact, that the parks be made a place for the sick as well as the healthy; Bernard J. Newman, secretary of the Philadelphia Housing Commission, spoke of the great necessity for better housing conditions, for frequently patients discharged from a sanitarium, return to the insanitary conditions of their homes.

Philadelphia

Personal.—Dr. John K. Mitchell has been elected to the vacancy on the board of directors of the Library Company of Philadelphia, created by the death of his father, Dr. S. Weir Mitchell, who had been a director since 1875.——Dr. Alexander F. Hazard is seriously ill at his home.

Meeting of College of Physicians.—At the stated meeting of the College of Physicians of Philadelphia, a portrait of Sir William Osler was presented on behalf of Lady Osler, to the college, Dr. James Tyson making the presentation address. A symposium on municipal hygiene was held, at which Mr. M. N. Baker, editor of *Engineering News*, spoke on "Considerations of Municipal Sanitation," and Dr. S. Josephine Baker of New York City, spoke on "The Organization of the Bureau of Child Hygiene in New York City and Its Results."

State Board to Sue Coroner.—The difference of opinion between Coroner Knight and the State Anatomical Board over the disposition of unidentified bodies found in Philadelphia County, will be carried into court for adjustment. The board claims that the coroner has been withholding bodies which should be sent to various hospitals for dissecting purposes. The coroner contends that he has only a few bodies to give to the board for the advancement of medical education. Arrangements are being made for an amicable test case.

Hospital Reports.—The one hundred and sixty-third annual meeting of the Pennsylvania Hospital Corporation was held May 4, at that institution. In the year ended February 28, 4,154 patients were treated at the hospital; 28,986 patients were treated in the receiving wards and 21,012 cases were treated in the outpatient department. In the financial report it was shown that $420,431 had been expended in the last year for the three departments, the hospital at Eighth and Pine Streets and the insane departments at Forty-Ninth and Market and Forty-Fourth and Market Streets.——The fortieth annual meeting of the Jewish Maternity Association was held May 3 at the temporary hospital on North Sixth Street. Dr. Isaac Leopold was elected medical director. The new hospital now in the course of erection, at Fifth and Spruce Streets, will be opened June 1. The new building will cost about $87,000.——The Providence General Hospital has purchased a residence and tract of 6 acres for $40,000 on Wissahickon Avenue, 162 feet, with a depth of 587 feet on Hermit Street, 431 feet on the northeast line and 614 feet on the line of Fairmount Park.——The new building of the Lebanon Hospital was dedicated May 3. Drs. Isidore D. Stern and J. L. Lillenblum were named resident physicians.

VIRGINIA

Typhoid Vaccine Distributed.—The State Board of Health has completed arrangements whereby it will distribute antityphoid serum at a cost of 60 cents, for the three inoculations, instead of 90 cents, as charged last year.

Must Pay Tax this Year.—The act recently passed by the assembly exempting physicians from payment of license tax will not take effect until June 20, and the auditor of public accounts has ruled that physicians shall be assessed for licenses for 1914, as heretofore.

Personal.—Dr. Meade Ferguson, state bacteriologist, has resigned and his assistant, J. O. Fitzgerald, has been appointed temporary head of the state bacteriologic laboratory.——The residence of Dr. Alexander W. Terrell, Rivermont, Lynchburg, was burned, with a loss of $10,000.

Frees Community from Malaria.—One Virginia community, in the vicinity of Chestnut Level and Keeling, Pittsylvania County, by taking the advice of the State Health Department and draining the low ground of the neighborhood, and by united effort has practically abolished malaria and in addition has restored and rendered valuable many acres of valuable inundated and previously worthless land.

Monument to Dr. Edwards.—As a tribute to the memory and faithful service of the late Dr. Landon B. Edwards, who was for many years secretary of the Virginia Medical Society, editor of the *Virginia Medical Semi-Monthly* and professor of the practice of medicine in the Medical College of Virginia, the members of the medical profession of the state have united to erect a monument for his grave in Hollywood Cemetery, Richmond. The monument bears the following inscription: "Erected by his friends to the memory of Landon Brame Edwards, M.D. Born Sept. 20, 1845; died Nov. 27, 1910. Widely known as a medical practitioner, journalist and teacher, and for many years the efficient secretary of the Medical Society of Virginia."

New Medical Board.—The governor announced, April 1, the appointment of the new State Board of Medical Examiners to conform to the recent revision of the board authorized by the general assembly. Under the new law there is to be one representative from each congressional district, one homeopathic and one osteopathic representative, irrespective of districts. The board was made up as follows: first district, Dr. Joseph N. Barney, Jr., Fredericksburg; second district, Dr. Herbert Old, Norfolk; third district, Dr. Junius E. Warinner, Richmond; fourth district, Dr. Otho C. Wright, Jarratt; fifth district, Dr. Richard S. Martin, Stuart; sixth district, Dr. John W. Preston, Roanoke; seventh district, Dr. Philip W. Boyd, Jr., Winchester; eighth district, Dr. Lewis Holladay, Orange; ninth district, Dr. William W. Chaffin, Pulaski; tenth district, Dr. Robert Glasgow, Lexington; homeopathic representative, Dr. Harry S. Corey, Richmond; osteopathic representative, E. H. Shackleford, Richmond. The board met for reorganization at Norfolk, April 6, and elected the following officers: president, Dr. Richard S. Martin, Stuart; vice-president, Dr. Junius Warinner, Richmond; secretary-treasurer, Dr. Joseph N. Barney, Jr., Fredericksburg.

WISCONSIN

Sanatorium Notes.—The contract for the construction of the Brown County Tuberculosis Sanatorium, to be erected on the E. Williams farm in the town of Little Rapids, was awarded April 27 for $14,667.25. The building will be of reinforced concrete and will accommodate about fifty patients.

New Officers.—Milwaukee North Side Physicians' Club, May 1: president, Dr. Albert E. Miedling; secretary-treasurer, Dr. George R. Randall.——Oshkosh Medical Club, April 29: executive committee, Drs. William P. Wheeler, Harry H. Meusel, Jasper W. Lockhart; secretary, Dr. Wilbur N. Linn.——Iowa County Medical Society at Dodgeville, April 23: president, Dr. William J. Pearce, Dodgeville; secretary-treasurer, Dr. Homer D. Ludden, Mineral Point.

WYOMING

Personal.—Dr. and Mrs. Edward F. Fisher and family, Diamondville, have returned from Europe.——Dr. Josiah H. Holland has resigned from the medical corps of the Army and is located in Evanston.

Physician Captures Burglar.—Dr. Thomas J. Swisher, Rawlins, on April 28, surprised a burglar in the pharmacy adjacent to his office. As the invader, a Mexican, ran, the physician fired, and a bullet penetrated the burglar's right side in the region of the liver. Aid was summoned and the Mexican was carried to the hospital where Dr. Swisher dressed the wound. The Mexican was sentenced five days later, after pleading guilty, to serve a term in the penitentiary.

GENERAL

Correction of Error.—In Abstract 134, in The Journal, Feb. 14, 1914, p. 582, the formula for a mixture is given as 0.1 gm. of mercuric cyanid when it should read 0.1 mgm.

Extra Appropriation Asked for Public Health Service.—Secretary of the Treasury McAdoo, in behalf of the Public Health Service, has asked the House of Representatives for an appropriation, to be made instantly available, of $100,000 to prevent the introduction and spread of infectious diseases, as the current year fund for this purpose is already exhausted.

Camp for Refugees.—Surgeon Gustave M. Corput, U. S. P. H. S., surgeon in chief of the New Orleans Quarantine Station, is preparing to erect a camp at the station to shelter and feed about two thousand refugees. Plans have been submitted for a camp of approximately 400 tents. The frame structures of the camp have been turned over to the women refugees.

Personal.—The president of the Chinese Republic has conferred on Dr. T. W. Ayers, formerly of Anniston, Ala., but now in charge of the hospital and medical dispensary at Hwang-Hein, North China, the decoration of the Sixth Order of Chia Hoa.——Dr. A. R. Goodman, chief surgeon of the National Railways of Mexico, has been left in charge of the relief operations of the American Red Cross at Vera Cruz.

Foes of Tuberculosis Meet.—At the annual meeting of the National Association for the Cure and Prevention of Tuberculosis in Washington, May 4-8, the following officers were elected: president, Dr. George M. Kober, Washington; vice-presidents, Drs. Lee K. Frankel, New York City, and Walter Jarvis Barlow, Los Angeles; secretary, Dr. Henry Barton Williams, Baltimore, and director, Surgeon-General Rupert Blue, U. S. P. H. S., Washington.

Formation of New Roentgen Organization.—The Roentgen Society of New England was formed at a meeting of about twenty roentgenologists, held at the office of Dr. Arial W. George of Boston, May 6, 1914. An organization was effected and the regular program will begin in the fall. The officers elected were the executive committee: chairman, Dr. Arial W. George, Dr. Walter J. Dodd, Dr. Samuel W. Ellsworth, and secretary, Dr. Ralph B. Leonard, all of Boston.

Report of the Rockefeller Sanitary Commission.—The report for 1913 of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease shows that the number of persons treated in eleven states during the year was 186,277, an average of 616 persons for each working day of the year. The average for 1912 was 720. The area covered during 1913 had lighter infection than during the previous years. The commission expended $195,900 and examined 480,951 persons, the expense for each examination being 40 cents and for those treated $1.05. The various states expended amounts ranging from $200 to $8,000.

Death-Rate in Canal Zone for March.—The total number of deaths from all causes among employees was 34 (disease 24, violence 10), an annual average per thousand of 6.18 and 2.57, respectively. The annual average death-rate per thou-

sand in the cities of Panama and Colon, and in the Canal Zone, including both employees and civil population, for the month of March was 25.48. Among employees, deaths from the principal diseases were: lobar pneumonia, 5; organic disease of the heart, 1; tuberculosis, 3; typhoid fever, 1; malaria fever, 2; leaving 12 deaths from all other diseases, and 10 deaths from external violence. No case of yellow fever, small-pox, or plague originated on, or was brought to the Isthmus during the month.

International Society for Sexual Research.—The first congress of this association will be held in Berlin, October 31 to November 2, 1914. It will cover the entire field of scientific sexual research, and will be divided into a biologic-medical, a sociologic, a legal and a philosophic-psychologic-pedagogic section. The proceedings will be conducted in German, English and French. Among the addresses already listed are essays by some of the more famous foreign authorities on these subjects. Participation in the congress is free to members of the society. Non-members are expected to pay a registration fee of 10 marks. Those desiring to participate should communicate with the second secretary, Dr. Max Marcuse, Berlin W. 35, Lützowstr. 85.

Bequests and Donations.—The following bequests and donations have recently been announced.

Germantown Hospital and St. Luke's Hospital, Philadelphia, each $5,000; Chestnut Hill Home for Consumptives, $2,000, by the will of Elizabeth B. Jeffries.

Associated Jewish Charities of Chicago, $1,000, and Chicago Home for the Friendless, $500, by the will of Henry Grenebaum.

Elkins Memorial Hospital, Abingdon, Pa., a gift of $5,000 for the endowment of a room in memory of John Wilton Coldon, Jenkintown.

Medical Department of the University of Cincinnati, $30,500, in municipal bonds, and $900 in cash, to be known as the Thomas Gibson Medical Endowment Fund, being the residue of the estate of Frances W. Gibson.

New Orleans Charity Hospital, $8,000, by an anonymous donor for a modern annex, to be devoted entirely to tuberculosis patients.

International Health Commission.—The International Health Commission of the United States, founded with a fund of approximately $100,000,000 guaranteed by Mr. John D. Rockefeller and his friends, is studying the problems presented by tropical medicine, and a beginning is being made with ankylostomiasis. Mr. Wycliffe Rose, the director of the commission, has visited several of the West Indian islands to make arrangements with the local authorities, and he has recently conferred in London with a committee of the colonial office, which it is intended shall in future work in conjunction with the American commission. Mr. Rose, who has been joined by Dr. Sandwith of the London School of Tropical Medicine, is visiting Egypt, Ceylon, the Federated Malay states and the Philippine Islands. At the present time Dr. Leiper of the London School of Tropical Medicine is in China studying bilharziosis under the auspices of the Admiralty and Colonial office. It is understood that he will extend his investigation to the occurrence of ankylostomiasis among coolies on tea estates.

Association for the Prevention of Infant Mortality.—The Transactions of the American Association for the Study and Prevention of Infant Mortality for the year 1913, is now being distributed. It is a pamphlet of nearly 450 pages, containing many interesting papers and discussions on this important branch of national welfare, beside committee reports and a record of the routine transactions of the association. Nov. 15, 1913, the association had 716 members who had paid their dues, seventeen of whom were from foreign countries—Canada, China, England, New Zealand and Scotland. Hawaii and the Philippines are each represented by one member. There are, however, eighty-five affiliated societies in fifty-three towns in twenty-seven states, which would indirectly increase by a considerable number the workers along this line of social endeavor. The association works in harmony, also, with the National Childrens' Bureau. The financial statement shows that about $7,500 was collected during the year and about $6,500 expended. The price of the transactions to non-members is $3.12 postpaid. Austin McLanahan is treasurer and Gertrude B. Knipp is executive secretary, with headquarters at 1211 Cathedral Street, Baltimore.

FOREIGN

New Officers.—At the annual meeting of the American Medical Association of Vienna, March 24, the following officers were elected: president, Dr. Edgar J. Widby; vice-president, Dr. Henry H. McCarthy; secretary, Dr. William F. Patten; treasurer, Dr. H. E. Molzahn, and executive committee, Drs. J. W. Lee, Charles H. McCollom, H. E. Molzahn, Baxter L. Thompson and W. B. Hopkins.

CANADA

School for Feeble-Minded Contemplated.—British Columbia is considering a scheme to provide a school for the mentally deficient children in that province. A census of these is being taken. This will be the first of its kind in Canada although Manitoba is also considering establishing one.

Personal.—Dr. Alexander B. Osborne, Hamilton, Ont., has returned from a two-months' stay in Jamaica.——Dr. Allan C. Rankin, formerly of Montreal, but who has been bacteriologist for some time to the King of Siam, has joined the faculty of the University of Alberta.——Dr. Herbert E. Clutterbuck, Toronto, is spending six months in Great Britain.

Postgraduate Course on Tuberculosis.—The Bruchesi Institute, Montreal, for the study of all forms of tuberculosis, will conduct its second annual series of postgraduate courses on early diagnosis and treatment of this disease. The first class is limited to six members and will commence study on June 6, when Dr. S. Adolphus Knopf, New York, will deliver the first lecture.

Health Status of Winnipeg.—The total expenditure for the Health Department of Winnipeg in 1913 was $212,070.54. The population is estimated at 200,000. There were 232 cases of typhoid fever with 18 deaths; small-pox, 44, with 1 death; chicken-pox, 173; measles, 361, with 15 deaths; scarlet fever, 1,288, with 45 deaths; whooping-cough, 57, with 19 deaths; mumps, 44; diphtheria, 281, with 34 deaths; erysipelas, 95, with 19 deaths; tuberculosis, 213, with 132 deaths; a total of 2,788 cases of infectious diseases, with 283 deaths.

Campaign against Infant Mortality.—Montreal's Health Department is preparing for a vigorous campaign against infant mortality during the approaching summer months. Circulars to mothers are now being prepared, printed in English, French, Italian, Russian, Hebrew and German; and these will be distributed when there is a birth recorded. Lectures will also be given to mothers with young families when the circulars will also be distributed. The fly nuisance and the milk-supply is also to be given special attention.

Ontario Health Officers Meet.—Civic, provincial, district and municipal officers of health of Ontario met in annual convention in Toronto, May 7 and 8, under the presidency of Dr. Charles J. C. O. Hastings, M.O.H., Toronto. Dr. John W. S. McCullough, secretary of the Ontario Board of Health, presented the statement that "the reports of the district officers of health in that province indicated that the conditions in the slaughter-houses of Ontario are nothing short of scandalous. The premises are often filthy and the conditions are such that if generally known would make Ontario citizens all vegetarians." The salaries of municipal officers of health came in for considerable discussion and resulted in a special committee being appointed to inquire into the same and report at the next annual meeting. This was precipitated by the report of a medical officer of health of an Ontario town who said that he was paid $10 per annum for looking after the health of that town. A startling statement was given by one officer of health who said that the public schools of Ontario, that is the village and rural schools, were in a deplorable, unkempt condition, and that they were so managed as to contribute a large percentage of the tuberculosis in that province. He pointed out that 30 per cent. of the deaths among students in Ontario, from the official returns, resulted from tuberculosis; and that 24 per cent. among schoolteachers was also caused by this disease while only 7 per cent. of the deaths of other people were from tubercular disease. More children in Ontario died between the school ages of 5 and 14, from preventable diseases than adults did between the ages of 50 and 60, from all diseases. The speaker described the conditions in thirty schools in the two townships he had control of, but these were only typical of all Ontario schools. He further stated that 25 per cent. of the schools had no wells, and of those which had, 25 per cent. of them had bad water. Twenty-five per cent. had windows which would not open, 50 per cent. had filthy closets and 75 per cent. no cloak rooms. Dr. Edmund E. King, Toronto, spoke briefly on the Ontario Workmen's Compensation Act, stating that the medical profession had been absolutely excluded. The following officers were elected: president, Dr. William R. Hall, Chatham; vice-president, Dr. Angus W. McPherson, Peterborough, and secretary, Dr. John W. S. McCullough, Toronto.

LONDON LETTER

London, May 1, 1914.

The Annual Meeting of the British Medical Association

The annual meeting of the British Medical Association will be held from July 28 to August 1, at Aberdeen; 1,500 members and visitors are expected to attend. The president, Sir Alexander Ogston, will deliver the presidential address. The subject has not been determined, but it probably will deal with the part which Aberdeen has played in the history of Scotland, and the influence which it has had on its commerce and education. The popular lecture will be delivered by J. Arthur Thomson on the subject *"Vis Medicatrix Naturae."* He will discuss the value to man of the beauty of Nature, the dramatic interest of Nature, and the consolations of Nature as seen in the light of evolutionist philosophy. The address in medicine will be delivered by Dr. Archibald E. Garrod, and the address in surgery by Sir John Bland-Sutton. The scientific business will be conducted in sixteen sections. In the Section of Dermatology a discussion will be opened by Dr. Norman Walker on "The Need for Some Method in the Conflict with Lupus and Ringworm." In the Section of Electrotherapeutics and Radiology, Professor Leduc will deliver an introductory address on "Cerebral Galvanization." The first day's meeting will be devoted to this and to a discussion on "The Therapeutic Uses of High-Frequency Currents." Dr. W. Deane Butcher and Dr. John Macintyre will open a discussion on "The Comparative Value of X-Rays and Radium in the Treatment of Malignant Growths," and Dr. Agnes Savill and Dr. W. F. Somerville will open a discussion on "Electrotherapy in Neurasthenia"; there will also be a demonstration on "Muscle Testing by Means of Condensers." For the last day, discussions have been arranged on "X-Ray Diagnosis in Gastro-Intestinal Conditions," and with the Section of Medicine on "The Diagnosis of Chronic Pulmonary Tuberculosis." In the Section of Medicine a joint discussion with the Section of Pediatrics on "The Diagnosis of Chronic Pulmonary Tuberculosis in Infancy and Childhood" will take place. The discussion will be opened by Dr. Barty King, Dr. Clive Riviere and Dr. Ironside Bruce. Sir William Osler, Professor von Pirquet, Dr. Frank Eve, and it is hoped Professor Baginsky of Berlin will take part. A discussion on "Artificial Pneumothorax in Pulmonary Tuberculosis" is to be opened by Dr. Rist of the Laennec Hospital, Paris. It is expected that Brauer of Hamburg, will also contribute. A discussion on "Headache: Its Causes and Treatment" will be treated from various points of view by Dr. Harry Campbell, who is to open, Mr. Leslie Paton, Sir William Osler and Dr. L. H. Pegler. In the Section of Naval and Military Medicine and Surgery the following subjects have been arranged: (1) "The Treatment of the Wounded in Naval Warfare," to be opened by Fleet-Surgeon D. W. Hewitt; (2) "Gangrene in War," to be opened by Captain C. Max Page; (3) "Salvarsan in the Treatment of Syphilis," and (4) "Common Ailments in Camp: Their Prevention and Treatment," to be opened by Captain Cecil Johnson. Three discussions have been arranged provisionally in the Section of Ophthalmology: "The Choice of Cataract Operation," will be opened by Mr. E. E. Maddox, "The Hygiene of Reading and Near Vision" will be opened by Mr. J. Herbert Parsons, and "The Teaching of Ophthalmology to Medical Students" will be opened by Dr. Maitland Ramsay. In the Section of Pathology and Bacteriology the president, Dr. W. S. Lazarus-Barlow, will open a discussion on "The Action of Radiations on Cells and Fluids." A discussion on "The Importance of Biochemistry in Immunity Reactions" will be opened by Dr. Carl Browning. There will be a joint discussion with the Section of Pharmacology, opened by Dr. Thomas Lewis on "The Pathology of Heart Function, Including the Experimental Pharmacology and Therapeutics of Pathologic Conditions of the Heart." Dr. W. J. Penfold will introduce the subject of "The Importance of Variability Among Bacteria and its Bearings on Diagnosis." In the Section of Pharmacology discussions will take place on "Recent Advances in the Relationship between Chemical Constitution and Pharmacologic Activity," and on "The Pharmacology and Therapeutics of the Animal Extracts, Exclusive of Thyroid Extract." In the Section of Surgery a subject discussed at the recent International Medical Congress, "Anoci-Association, or the Evolution of the Shockless Operation," will be opened by Mr. H. M. W. Gray. Discussions will be opened by Mr. Robert Jones on "The Surgical Treatment of Arthritic Deformities" and by Mr. W. G. Spencer on "The Etiology and Treatment of Carcinoma of the Tongue." In the Section of Tropical Medicine: (1) "The Training and Position in Administration of the Sanitarian in the Tropics" will be opened by Colonel King; (2) "The Surgical Treatment of Colitis and Postdysenteric Conditions" will be opened by Mr. James Cantlie, and (3) "Kala Azar and Allied Conditions" will be discussed. Papers on "Sprue," "Sand-Fly Fever" and "Beriberi" have been promised, and others are being arranged. A special subsection of the museum is being reserved for exhibits in tropical medicine and for an exhibition of ancient and historical surgical instruments.

PARIS LETTER

Paris, April 28, 1914.

The Physician's Right to Have a Reserve Stock of Medicines

The sale of poisonous substances is regulated in France by an old royal ordinance of Oct. 26, 1846, which provides that such substances may not be sold for medical use except by pharmacists, and then only to fill prescriptions written by physicians or veterinarians. A tacit understanding has existed between physicians and pharmacists, to avoid this obsolete ruling, but a recent decision of the Court of Appeals of Paris (The Journal, Feb. 28, 1914, p. 711) has just destroyed the régime of tolerance and placed the medical profession under the legislation of 1846, without subsequent evolution in medical practice.

This return to the letter of superannuated legislation inconveniences medical practitioners in the extreme, and at its last meeting the Syndicat médical de Paris demanded unanimously, on the motion of Drs. Chassevant, *agrégé* professor of the Faculté de médecine de Paris, and Désquelle and Granjux, that an additional paragraph be inserted in the decree concerning the sale of poisons, by which pharmacists shall be authorized to furnish physicians medicinal preparations of any nature for professional purposes on the presentation of an order, written, dated and signed by the physician, stating that the demand is made in view of his professional needs; this order to be filed by the pharmacist as his guaranty.

Leave of Absence for Convalescent Soldiers

It has been a long-established custom in military hospitals for physicians to demand a certain number of days' leave for any convalescent soldier in need of rest which would permit the patient to remain with his family until his recovery. Until now, the heads of the divisions have always accorded this permission. Recently, however, the commander of a corps, considering this tradition an encroachment on the authority of the officer in command, declared in a circular letter, that henceforth, since some men are in no condition to return to the service immediately on leaving the hospital or infirmary, it shall be the privilege of the commanding officer, after consideration of all the circumstances, to decide on the disposition of the convalescent.

Concerning this circular letter, the most influential military journal, the *France militaire*, says that this is an abusive interference with the rights of the physician: that the soldier who is in need of a certain time for rest, following a sickness, would not be able to find it in a barrack, and that it is obvious that the question whether or not he may be sent to his family should be determined solely from the medical point of view, uninfluenced by the needs of the service, or the commander's more or less favorable opinion of the conduct of the man.

The Rational Timing of Meals

At one of the last sessions of the Académie des sciences, Dr. Bergonié, professor of biologic physics and of the clinic of medical electricity at the Faculté de médecine de Bordeaux, gave an interesting address on the practicability of so changing our meal-times as to adapt them better to the physiologic needs of the body. According to Bergonié, the hours least suited to heavy meals are from noon to 1 p. m., and from 7 to 8 p. m. The curve of the coefficient of energy has passed, indeed, some time before, to its lowest level, and any large meal, taken at these hours can only surcharge the liver, which has long remained quiescent. The best hour for he principal meal is at 7:30 a. m., when the curve of vital expenditure is rising rapidly to its maximum, and remains high for a long time. This meal should furnish not only the energy for the following four or five hours, but also the complement which the liver, emptied by the nocturnal abstinence, should have for storage—from

1,400 to 1,500 calories, a total frequently mentioned. Another well-timed meal would be at 4:30 p. m. (tea, a light meal of 300 to 400 calories). Finally, a third meal, of a heavier sort, 700 to 800 calories, taken at about 8 p. m., should complete alimentation, and would be distributed by the action of the liver in the hours of nocturnal fasting.

In a family where for more than six years meals were timed according to this theory, the results, from the point of view of general health, were most satisfactory.

It should be remembered also that the history of the French words *déjeuner* and *diner* tends to show that the hours for meals have been progressively displaced. The word *diner* is a contraction of the late and medieval Latin *disjunare*, which means to end a fast. It is the same as the English word breakfast. This was, then, originally, the first meal taken on rising. In the twelfth and thirteenth centuries, the general custom was to dine a little after 9 a. m. Those who arose earlier and worked in the open air could not wait until 9 to 10 a. m. without a light meal, and to designate it the word *desjeuner* was coined, carrying always the idea of breaking the fast.

BERLIN LETTER

BERLIN, April 24, 1914.

Personal

Dr. Dold, privat-docent of hygiene and bacteriology at the Strassburg University, has been given charge of the arrangement of the Institute of Hygiene and Bacteriology at the German Medicine and Engineering School for Chinese at Shanghai. He has received, at the same time, a professorship for hygiene and bacteriology in the same school.

The editorship of the *Journal of Orthopedic Surgery*, published by Enke in Stuttgart, has been accepted by Professor Biesalski, who thus succeeds the late Professor Joachimstal.

The Reduction of the Birth-Rate Lessened

The first review of the births and infant mortality in the grand duchy of Hesse for the year 1913 shows that the reduction of the birth-rate is lessened and shows also a considerable reduction in infant mortality. In 1913, only 9.2 per cent. of the infants died as contrasted with 15.4 per cent. in 1905 and 15.7 per cent. in 1904.

Philanthropic Social Service in the Berlin Hospitals

The deputation for the municipal hospitals and the public health has accepted the proposal of a committee for social aid to place women experienced in philanthropic work in all the hospitals to conduct a systematic social service. These women will visit the hospitals on certain days to learn whether the living conditions of any family are affected by the sickness of any of the patients to the extent that social aid is necessary. They will determine also whether special aid of any kind should be given to the patient on leaving the hospital. The securing of a new place to work or the provision of means for care during convalescence will be functions of this service.

Photoplay Forbidden Reflecting on Physicians

The chief of police of Berlin has lately forbidden the production of a motion-picture which, under the title of "A Woman's Slave," had as its chief feature a violation of duty by a physician. The physician, who is ensnared by a woman, has sacrificed his whole property for her. In order to earn more money he undertakes an unnecessary operation on a baroness who was injured by the collapse of a platform. The operation is unsuccessful and he commits suicide. The film manufacturer sought a removal of the injunction. The superior court, however, decided against the manufacturer, because confidence in the medical profession would be impaired by the presentation of the film. The highest court to which the manufacturer appealed confirmed the decision on the ground that it was for the interest of public policy that the public should have confidence in the medical profession, and that the presentation of this play would have a tendency to undermine this confidence.

Memorial Services for a German Scientist in Japan

A memorial celebration for Professor Baelz, professor at the Imperial University at Tokyo, from 1875 to 1905, and later professor emeritus, who died in Stuttgart last year, was instituted before the monument erected in the university garden in 1907 by his professional colleagues and former pupils. Hundreds of Japanese physicians and the German ambassador with members of the embassy attended. Aoyama, the dean of the medical faculty, Yamakawa, the director of the university, the German professor Florenz, and the representative of Kobe, Dr. Papallier, made addresses. At the conclusion of the exercises, garlands were placed on the monument from the German colonies at Yokohama and Kobe and from the German East Asiatic Society of Tokyo.

VIENNA LETTER

VIENNA, April 17, 1914.

Patent Medicines in Austria

A short time ago, the leading men of the medical profession and the representatives of the Union of Apothecaries and Pharmacists of Austria had a joint meeting to consider action against the sale of patent medicines. While the chief objection against the patent medicines and the so-called "specialties" (ready-made medicinal mixtures and substances from different manufacturers) is primarily financial on the part of the apothecaries, the medical profession objects to them because the constituents prescribed are unknown even if such substances are thought fit to be given to the patient. The source of the evil is in the "write-ups" or medical articles written less from a scientific point of view than from that of advertising a given remedy. It has become quite a custom here, and in Germany too, that a medical periodical, desirous of advertisements from pharmaceutical firms, offers to procure the necessary medical papers and articles extolling the different possibilities and uses of the remedy under consideration. The cooperation of the press has been recognized as one of the important points in this campaign, and the names of those medical men who are known to produce the write-ups have been put on a black list and the periodicals have been invited to reject such articles written by them. A special committee was elected at the meeting mentioned above, to devise the best means of dealing with the problem. Some of the suggestions made are that doctors should abstain from prescribing remedies which are advertised in daily non-medical papers; substances with fancy names which state more than a chemical composition, or indicate the disease for which the remedy is to be prescribed should also be avoided, and the apothecaries, who alone in this country are permitted to sell poisonous or heroic remedies, should not have these "specialties" in their stock. The profession, which is suffering under the present unreliability of the chemical industry and its products, eagerly looks forward to the outcome of this agitation.

Campaign against Tuberculosis

The government and private institutions have recently been paying much attention to the fight against that scourge, tuberculosis, which, in some parts of the empire, is responsible for 15 per cent. of all deaths. As a matter of fact, we have only one institute capable of dealing with tuberculous persons from the poorer classes, while for the wealthiest portion, there are several so-called sanatoriums. The state of Lower Austria has devoted the sum of $200,000 (1,000,000 kronen) to enlarging the existing institute, which now has 265 beds for adults and sixty-four for children. An equal sum will be used every year for ten years for the same purpose in different districts so that within ten years we shall have eleven such institutes in this country. An interesting institution has evolved in connection with the large grant mentioned in my previous letter. As an aid to the endeavors to rear weak children in fresh air, all convalescents and also children already affected by tuberculosis will be taught to be useful in agricultural and horticultural occupations. As the grant also comprises three large rural estates, the institute will possess a large number of cows and other cattle, orchards, meadows and fields. There the children will learn to love the country work and take up this occupation. The present scarcity of rural workers—factory work attracts so many young persons from the country—might be ended, while the constant stay in fresh air will strengthen the body. The plan for erecting open-air and sunlight sanatoriums for children has recently been devised. The government has purchased a large area in the Tyrolese Alps. There, at an altitude of about 5,000 feet, an area constantly free from fog and having a large amount of rain and snow will be converted into a sanatorium for surgical tuberculosis, after the method of Dr. Rollier in Switzerland. The patients are constantly kept in open air, and the direct sunlight as well as the snow-reflected light, exerts its influence on the diseased part by increasing "doses," or intensity and duration. In the hands of Dr. Rollier and his followers, the effects of such treatment, with the exclusion of surgery, have been marvelous.

Marriages

Bartholomew O'Neill Murphy, M.D., to Miss Frances Veronica Dolan, both of Syracuse, N. Y., April 29.

Willard Robert Vaughan, M.D., Plainwell, Mich., to Miss Agnes M. Steinmayer of La Salle, Ill., May 2.

Alphonse Frank Kemp, M.D., Mankato, Minn., to Miss Irene Schreiner of New Prague, Minn., May 14.

John Steele Sweeney, M.D., Chicago, to Miss Ruth Miller of Findlay, Ohio, in New York City, May 4.

Stanley Aaron Krebs, M.D., Palmerton, Pa., to Miss Mildred Ruppert of Easton, Pa., April 28.

Maj. Powell C. Fauntleroy, M.C., U. S. Army, to Miss Mary Dalrymple at York, Pa., April 18.

Robert Bellinger Casler, M.D., to Miss Carolyn Brooks Johnston, both of Baltimore, April 29.

Penuel Harrod, M.D., to Miss Linnie Robinson, both of Avon, Ill., at Peoria, Ill., April 26.

John Robert Pence, M.D., to Miss Florence Stenerson, both of Minot, N. Dak., April 22.

Deaths

Sherman Leach, M.D. Starling Medical College, Columbus, Ohio, 1887; a Fellow of the American Medical Association; formerly professor of clinical surgery in the Ohio Medical University; surgeon to the Protestant, Mercy and St. Clair hospitals, Columbus; and local surgeon of the Baltimore and Ohio System; died at his home in Columbus, April 26, from pneumonia, aged 49.

Charles Edwin Sanford, M.D. Yale University, New Haven, Conn., 1853; a member of the Board of Medical Advisors of the Connecticut State Insane Hospital, Norwich; for more than fifty years a practitioner of Bridgeport, Conn., and once president of the city board of health; died at his home, April 26, from cerebral hemorrhage, aged 83.

John C. Rosser, M.D. Jefferson Medical College, 1867; hospital steward in the Confederate service during the Civil War; for twenty years chief surgeon of the Northern Pacific Railroad, with headquarters at Brainerd, Minn.; and later a practitioner of Anoka, Minn.; died at the home of his daughter in Duluth, Minn., April 25, aged 73.

Abraham Van Meter, M.D. Philadelphia College of Medicine and Surgery, 1865; a veteran of the Civil War; for two years of Wakenda, Mo., later local surgeon of the Frisco System at Lamar, Mo.; died at the home of his daughter in Joplin, Mo., April 18, from cerebral hemorrhage, after an illness of five years, aged 74.

William Nisbet, M.D. Jefferson Medical College, 1867; assistant surgeon of the Tenth Alabama Infantry, C.S.A., and later in charge of hospitals at Liberty and Richmond, Va., during the Civil War; for fifty years a druggist of Jacksonville, Ala.; died at his home, March 9, from senile debility, aged 79.

Edward Minturn Assenheimer, M.D. College of Physicians and Surgeons, New York City, 1904; a member of the Medical Society of the State of New York; aged 34; died at the home of his father in New York City, April 30, it is said from the effects of an over-dose of veronal.

John Young, M.D. Missouri Medical College, St. Louis, 1876; a member of the Arkansas Medical Society; of Springdale, Ark.; died at his home March 24, aged 56. At a special meeting of the Washington County Medical Society resolutions of affection and regret were adopted.

William Caldwell, M.D. Victoria College, Cobourg, Ont., 1874; a specialist on diseases of the eye, ear and nose; for many years physician to the Peterborough County Jail; died at his home in Peterborough, Ont., February 8, aged 72.

William H. Kerr, M.D. University of Pennsylvania, Philadelphia, 1867; of Minneapolis; for thirty years a practitioner of Falls City, Neb.; died suddenly in Minneapolis, Minn., May 1, from heart disease, aged 74.

Thomas J. McFarland, M.D. New Orleans School of Medicine, 1862; major and brigade surgeon in the Confederate service during the Civil War; died at his home in Port Lavaca, Texas, February 24, aged 77.

Oliver N. Wolcott, M.D. Starling Medical College, Columbus, Ohio, 1875; for nine years head of the Sheppard (Ohio) Sanitarium, and later a practitioner of Columbus; died at the home of his father-in-law in Jacksontown, Ohio, April 26, from cerebral hemorrhage, aged 63.

Sluman C. Crittenden, M.D. Philadelphia College of Medicine and Surgery, 1856; a surgeon of volunteers during the Civil War; for many years a practitioner of Rochester, Buffalo and Batavia, N. Y.; died at the home of his son in Detroit, Mich., April 28, aged 79.

Newton Freeman Curtis, M.D. College of Physicians and Surgeons, New York City, 1874; a member of the Massachusetts Medical Society; for many years a practitioner of White Plains, N. Y.; died at the home of his daughter in Milton, Mass., April 30, aged 64.

John MacConnell, M.D. Dublin University School of Medicine, 187—; also a graduate of the Boston University Law School; for many years vital statistician for the Boston Department of Health; died May 1 at the Rest Haven Hospital, Dorchester, Boston, aged 75.

Charles Henry Brockway, M.D. College of Physicians and Surgeons, New York City, 1873; a member of the Massachusetts Medical Society; of Worcester, Mass.; died in the Worcester City Hospital, April 17, from cerebral hemorrhage, aged 61.

Joseph Lanctot, M.D. Victoria College, Cobourg, Ont., 1869; Ecole de médecine et de chirurgie, Montreal, 1873; who represented the province of Quebec at the French Medical Congress in 1912; died at his home in Montreal, February 20, aged 58.

Charles Auringer, M.D. Syracuse (N. Y.) Medical College, Eclectic, 1855; for more than thirty years connected with the Michigan Mutual Life Insurance Company; died at his home in Detroit, Mich., April 15, from senile debility, aged 87.

Alfred Monroe Armstrong, M.D. Texas Medical College and Hospital, Galveston, 1870; a member of the State Medical Association of Texas; died at his home in Crawford, Texas, March 8, aged 76.

Samuel A. Henley, (license, N. C., 1885); formerly superintendent of health of Randolph County, N. C.; a practitioner for fifty-two years; died at his home in Ashboro, N. C., March 11, aged 82.

Henry G. Gabel, M.D. Eclectic Medical Institute, Cincinnati, 1875; for two terms a member of the city council of Aurora, Ill.; died at his home in that city, April 25, from heart disease, aged 72.

John A. Jones, (license, Ky., thirty years' practice, 1894); a member of the Kentucky State Medical Association; died at his home in Altona, near Calvert City, Ky., April 11, from pneumonia, aged 74.

Charles Francis Kiersted, M.D. Geneva (N. Y.) Medical College, 1872; a Fellow of the American Medical Association; died at his home in Gillett, Pa., April 24, from heart disease, aged 69.

Alexander Lumsden McLaren, M.D. Long Island College Hospital, Brooklyn, 1870; Trinity Medical College, Toronto, Ont., 1871; died at his home in Point Edward, Ont., March 18, aged 66.

Irby Wynne Hamil, M.D. Louisville (Ky.) Medical College, 1876; a member of the Medical Association of the State of Alabama; died at his home in Goshen, Ala., April 25, aged 60.

Charles Whitington Keel, M.D. Medical College of Virginia, Richmond, 1897; a member of the Medical Society of Virginia; died at his home in Ore Bank, Va., April 25, aged 41.

Samuel Randolph Andis, M.D. College of Physicians and Surgeons, St. Joseph, Mo., 1880; once coroner of Atchison County, Mo.; died at his home in Tarkio, Mo., April 14, aged 66.

Walter Scott Hicks, M.D. University of Buffalo, N. Y., 1851; a member of the Medical Society of the State of New York; died at his home in Bristol, N. Y., March 16, aged 86.

William A. Sawyer, M.D. University of Wooster, Ohio, 1872; died at his home in Darlington, Pa., April 22, from organic heart disease, aged 70.

William Joseph O'Reiley, M.D. Bellevue Hospital Medical College, 1883; died at his home in Roslindale, Boston, April 22, aged 55.

Osmore Osmon Roberts, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1853; for fifty-six years a practitioner of Northampton, Mass.; died at his home in that city, April 26, aged 85.

Edward Henderson, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1874; of Pomona, Cal.; died in Los Angeles, Cal., April 14, a few weeks after a surgical operation, aged 63.

W. S. Posey, M.D. University of Nashville, Tenn., 1852; of Sulphur Bluff, Texas; died at the home of his daughter in Mount Pleasant, Texas, March 27, from senile debility, aged 84.

Daniel McFadyen, M.D. Detroit College of Medicine, 1904; a Fellow of the American Medical Association; died at his home in Detroit, April 22, from postdiphtheritic paralysis, aged 47.

James Y. D. Madeira, M.D. Jefferson Medical College, 1883; a Fellow of the American Medical Association; died at his home in Reading, Pa., April 19, from pneumonia, aged 57.

Francis Leverett Gerald, M.D. Eclectic Medical Institute, Cincinnati, 1873; a member of the New Hampshire Medical Society; died at his home in Warren, N. H., April 5, aged 75.

Paul Ehrhart, M.D. New York University, New York City, 1878; a member of the Medical Society of the State of New York; died at his home in New York City, April 30, aged 58.

Samuel C. Richardson, M.D. Physio-Medical College, Cincinnati, 1877; formerly of Terre Haute, Ind.; died at his home in Indianapolis, February 9, from nephritis, aged 91.

Daniel Egan, M.D. Rush Medical College, 1881; a Fellow of the American Medical Association; died at his home in Chicago, May 5, from disease of the stomach, aged 55.

Emmett Warren Doolittle, M.D. University of Iowa, Iowa City, 1875; formerly of Garden Grove, Ia., died at his home in Cainesville, Mo., April 21, from pneumonia, aged 62.

R. Houghton Sigmond, M.D. University of Virginia, Charlottesville, 1901; in charge of a hospital at Durango, Mex.; died in that city, about April 15, from uremia, aged 35.

Alexander Edwin Colerick, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865; died at his home in Pacific Grove, Cal., March 12, from paresis, aged 75.

Bruce S. Louthan, M.D. State University of Iowa, Iowa City, 1873; a member of the Iowa State Medical Society; died at his home in Sutherland, Iowa, April 20, aged 66.

George S. Wyckoff, M.D. University of Buffalo, N. Y., 1877; formerly of Leechburg, Pa.; died in Pittsburgh, Pa., February 10, from organic heart disease, aged 63.

Louis Peale Lampen, M.D. Jefferson Medical College, 1883; a Fellow of the American Medical Association; died at his home in Philadelphia, May 1, aged 54.

Walter Foulgham McMullen (license, Texas, years of practice, 1907), of Rockport, Tex.; died in Beeville, Tex., April 14, from cerebral hemorrhage, aged 58.

Jacob D. Mater, M.D. University of Virginia, Charlottesville, 1873; a veteran of the Civil War; died at his home in Bridgeton, Ind., April 16, aged 67.

Percie Holland, M.D. University of Tennessee, Nashville, 1910; died at the home of his parents in Springfield, Tenn., April 19, from tuberculosis, aged 28.

Frederick B. Righter, M.D. Hahnemann Medical College, Chicago, 1870; a veteran of the Civil War; died at his home in Lincoln, Neb., April 18, aged 78.

Joseph M. Sanderson, M.D. University of Louisville, Ky., 1886; died at his home in Speegleville, Tex., April 15, from heart disease, aged 55.

Thomas J. Harvey, M.D. Missouri Medical College, St. Louis, 1876; died at his home in St. Louis, April 22, from cerebral hemorrhage.

Isaac Windle, M.D. Jefferson Medical College, 1861; for thirty-two years a practitioner of Mitchell, S.D.; died about April 22, aged 88.

Fletcher Stillman Smith, M.D. University of Michigan, Ann Arbor, 1881; died at his home in Saginaw, Mich., April 20, aged 59.

James M. Bond, M.D. California Medical College, San Francisco, 1895; died at his home in Healdsburg, Cal., March 23.

E. A. Smith (license, Oklahoma, act of 1908), died at his home in Mountain View, March 22.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

BROMIDIA

Report of the Council on Pharmacy and Chemistry

The following report was submitted to the Council by a member of its Committee on Therapeutics, with the recommendation that publication be authorized. This recommendation was adopted.

W. A. PUCKNER, Secretary.

Bromidia at once suggests bromids; yet Bromidia is essentially a chloral rather than a bromide preparation. This nostrum illustrates the need of the provision in the Council's Rule 8 under which recognition is refused pharmaceutical mixtures whose names do not indicate their most potent ingredients. While the chloral content of Bromidia has been given considerable publicity, yet the preparation is used both by physicians and by the public without due consideration of its potent ingredient. This fact is attested not only by the fatal results which have followed its use but also by the many reports of habit formation. As long ago as in 1887 a fatal case of poisoning was reported[1] to the medical society of the District of Columbia due to an overdose taken by a Bromidia addict. The physician who reported this case also gave his experience with another patient who had the Bromidia habit. In the discussion of the paper a number of cases were reported by others present in which Bromidia had been taken without a physician's advice and with more or less grave symptoms of poisoning.

In the report of a death of one who had been a slave to Bromidia it was said:[2] "When the body was found, there were eleven one-ounce Bromidia bottles about the room or on his person. Nine were entirely empty and the other two were about half full. None of these bottles indicated that they had been purchased on a physician's prescription, only the druggist's label marked 'Bromidia' being on them."

Dr. Horatio C. Wood, Jr., gave[3] a striking illustration of how preparations like Bromidia come to be used even by physicians without consideration of their constituents:

"Within an hour after his father, a Brooklyn physician, had given him a dose of bromid, H.G.P., a prodigal son, died yesterday at his father's home in Brooklyn. Two years ago, when he appeared to have sown his wild oats, the father made him superintendent of his country place, near Grants Mills, Delaware County. A week ago the son left his place, and at 1 o'clock yesterday morning appeared at his father's Brooklyn home. He was nervous, and at 9 a. m. begged for a sedative.

"'I prescribed the usual quantity of bromidia,' the young man's father told a reporter. 'He was weak and had suffered from weak heart and kidney trouble for some time.'

"An hour later the father found the son dying and administered restoratives, but to no avail."

A circular, "The Advantages of Bromidia," makes it plain how physicians come to use a preparation like Bromidia without consideration of its potent constituent. In this circular the presence of chloral is at first frankly admitted, then it is suggested that in the combination the evil effects of chloral are completely eliminated and in the end the impression is left that Bromidia is practically innocuous. Thus at the beginning while arguing that Bromidia is better than extemporaneous preparations the chloral content is plainly acknowledged:

"In the untoward effects so frequently attending the use of extemporaneously prepared mixtures of chloral and the bromides, may be found the reason for BROMIDIA'S preference when the need for a hypnotic agent arises. Were it not for the well known disadvantages of these drugs which become still more marked with their continued use, there could be no special need for such a preparation as BROMIDIA (Battle), for the therapeutic powers of chloral and the bromides are among the most positive facts in medicine."

Again:

"It was to meet the growing professional demand for a combination of chloral and the bromides with their evil effects eliminated, that led to the manufacture of BROMIDIA (Battle)."

1. THE JOURNAL A. M. A., July 9, 1887, p. 55.
2. THE JOURNAL A. M. A., April 21, 1906, p. 1220.
3. THE JOURNAL A. M. A., April 21, 1906, p. 1220.

Then, suggesting the indiscriminate use of Bromidia—as an entity as Dr. Wood suggests—the claim is made that:

". . . its constituents have been chosen with a view of enabling Bromidia to meet every requirement for an agent of its class."

"Owing to the exceptional purity of its component parts and its freedom from untoward effects when continued over long periods, this product will be found of the highest utility in epilepsy."

". . . its action is that of chloral and the bromides minus their evil effects."

Finally Bromidia becomes a simple bromid preparation. Thus an advertisement reads:

"Bromidia's (Battle) Marked Sedative and Antispasmodic Qualities eminently fit it for the treatment of Maniacal Excitement, Epilepsy, Spasmodic Asthma, Convulsive Seizures of Reflex Origin, Sexual Neuroses, and other disorders attendant upon nervous irritability.

"Through its exhibition, the fullest therapeutic power of the bromides may be secured with a minimum of their evil effects; a feature of the greatest service when the necessity for continued treatment becomes necessary."

In addition to the general invitation to use Bromidia in epilepsy and various nervous disorders, a circular also recommends its use in typhoid, a recommendation, which, if followed, may turn the scale in favor of a fatal result. The circular states:

"As a soothing agent in the extreme restlessness and irritability of typhoid fever and other infectious diseases, BROMIDIA (Battle) is a therapeutic weapon of definite service. Relief of the headache of typhoid may also be secured through the use of BROMIDIA (Battle). By means of its administration for the above purposes, the patient's strength is conserved and as a result he is much better prepared to stand the force of the infection."

Particularly vicious is the recommendation that it be given to children. Thus, in a pamphlet entitled "Effective Drugs Effectively Combined":

"Another point of advantage to be found in bromidia is the ease with which it is borne by children. Owing to this tolerance, it is of distinct service in a considerable list of disorders of childhood. Thus, of course, employed with care and an understanding of its potency, bromidia has a field of usefulness in chorea, laryngismus stridulus, and whooping-cough. In other nervous disorders of childhood—those attending acute infections, for instance—bromidia is a definitely indicated therapeutic aid, owing to the soothing influence exerted by even a moderate dose and the absence of untoward effects. More specifically, the correcting influence of bromidia in the night-terrors of children may be mentioned."

Formerly advertisements asserted that each fluidram of Bromidia contained:

"Chloral hydrate	15 grains
"Potassium bromid	15 grains
"Extract of Cannabis indica	⅛ grain
"Extract of henbane	⅛ grain"

This formula also appears on the label of a sample package sent through the mails during 1914. A recent circular contains a somewhat different formula. Instead of "1/8 gr. each of gen. Imp. Ext. Cannabis Ind. and Hyoscyam." as was formerly claimed, each fluidram of Bromidia is now said, not to "contain" but to "represent," not the extracts but the far less potent drugs "Cannabis indica 1/8 grain, Hyoscyamus 1/8 grain," thus:

"Chloral hydrate	15 grains
"Pot. brom.	15 grains
"Cannabis indica	⅛ grain
"Hyoscyamus	⅛ grain"

Furnishing still greater variety, the labels on a recently purchased bottle of Bromidia, where under the Food and Drugs Act the presence of narcotic drugs must be declared, read:

"Alcohol 10 per cent., Chloral Hydrate, 91 grs. per ounce. Cannabis indica indeterminate in finished product."

"In the manufacture of BROMIDIA to each drachm of fluid used are added 15 grains of pure chloral hydrate and purified brom. pot., and ⅛ grain each of gen. imp. ext. cannabis ind. and hyoscinm."

These various statements as to the composition of Bromidia leave one very much "in the air." As chloral and potassium bromid are easily determined and since lying on the labels of widely exploited proprietaries has become somewhat risky recently, it is probable that the statements on the trade package are to be depended on and that each fluidram of Bromidia contains something like 12 grains each of chloral and potassium bromid and not 15 grains as the medical profession has been and is being told.

Pharmacists who have attempted to put up a nonproprietary preparation similar to or, more correctly, having the alleged composition of Bromidia have found it practically impossible to do so. The reason is that extract of cannabis indica is almost insoluble in a menstruum such as that found in Bromidia. The National Formulary, first edition, listed Mistura Chlorali et Potassii Bromidi Composita of which it was said: "Each fluidram contains 15 grains each of Chloral and of Bromid of Potassium, and 1/8 grain each of Extract of Indian Cannabis and Extract of Hyoscyamus." In this the pharmacists attempted to incorporate the cannabis indica by using the tincture of the drug and suspending it by the addition of tincture of soap bark. In the present edition of the National Formulary, the preparation is made by triturating the extract of cannabis indica with pumice stone and then filtering the finished product. This gives an "elegant" preparation—but one from which the cannabis indica is filtered out! A sad commentary on the National Formulary. It should not be supposed, however, that the manufacturers of Bromidia have solved the problem that has baffled the pharmacists; not at all. Bromidia probably contains no more cannabis indica than does its National Formulary prototype. The statement on the present trade packages, that the amount of cannabis indica in Bromidia is "indeterminate," is but a tardy acknowledgment of the fact that the stuff has not, and never had, the amount of cannabis indica claimed for it for so many years.

The "indications" named on the Bromidia labels are, in common with nostrums of this type, but suggestions for self-drugging. They will appeal to the layman who has purchased, either by prescription or otherwise, an "original package" of Bromidia and who may imagine he suffers from "nervousness," "sleeplessness," "headache" or "neuralgia."

But while the manufacturers in their advertising matter have on the whole not disguised the presence of chloral so much as they have attempted to make it appear that the chloral has been robbed of its dangers—for all hypnotics if used thoughtlessly are dangerous—after all the name has created the false impression that Bromidia is a bromid preparation. It is because of this false impression carried by its name, that Bromidia came to be used indiscriminately by the profession and in the course of time still more indiscriminately and recklessly by the public. Bromidia is a vicious chloral preparation masquerading under a misleading name. That physicians have been impressed by the claims of its harmlessness and by the mystery connected with the formula is not a credit to the intelligence of our profession. There is no doubt but that physicians are responsible for the use and abuse of this chloral preparation by the public.

There is no scientific or rational excuse for a ready-made preparation of this sort. When chloral or a bromid is indicated the proper dose of each of these, if they are to be combined, should be determined for each patient. Potassium bromid and chloral hydrate both are readily soluble in water, syrup or elixirs and it is a simple matter to prescribe the required dose of chloral and of bromid dissolved in some aromatic water like cinnamon-water (Aqua Cinnamomi), in some syrup like syrup of orange (Syrupus Aurantii) or in an elixir like the aromatic elixir (Elixir Aromaticum) or adjuvant elixir (Exixir Adjuvans). Prescribed thus the physician is alive, alike to the dangers and the limitations of the drugs; prescribed under a misleading proprietary name, the physician endangers his patient, stultifies his profession and tends to perpetuate the great American fraud.

EDITOR'S NOTE.—A list of some of the medical journals that advertise Bromidia:

Texas Medical News
Nashville Journal of Medicine & Surgery
Medical Brief
Annals of Surgery
Charlotte Medical Journal
Medical Sentinel
Memphis Medical Monthly
Laryngoscope
Medical World
Medical Review of Reviews
Louisville Monthly Journal
Indianapolis Medical Journal
Monthly Cyclopedia & Medical Bulletin
Journal of Nervous & Mental Diseases
Maryland Medical Journal
Merck's Archives
Iowa Medical Journal
Medical Standard
Southern Practitioner
New Orleans Medical & Surgical Journal
Therapeutic Gazette
Medical Herald
Medical Times
Texas Medical Journal
Wisconsin Medical Recorder
International Journal of Surgery
Vermont Medical Monthly
Atlanta Journal-Record of Medicine
St. Paul Medical Journal
Hospital Bulletin of the University of Maryland
Denver Medical Times
Buffalo Medical Journal
Medical Review
Ellingwood's Therapeutist
Eclectic Medical Journal
Massachusetts Medical Journal

CONVICTIONS UNDER THE FOOD AND DRUGS ACT

MONTE CHRISTO RUM AND QUININ FOR THE HAIR

The Monte Christo Cosmetic Company of New York City, which was a trade style used by one Albert Edelstein, shipped in interstate commerce a product labeled "Monte Christo Rum and Quinin for the Hair." The claims for the preparation were:

"Cools and invigorates the Scalp. Prevents the hair from falling out. Removes and prevents dandruff, imparting to the hair a delightful perfume."

A sample of the product was analyzed by the Bureau of Chemistry, and the chemists reported the following results:

Ethyl alcohol	18.5	per cent.
Wood alcohol	42.0	per cent.
Quinin (grams per 100 c.c.)	0.28	

This preparation was declared adulterated in that its purity and strength were inferior to the professed standard under which it was sold, in that wood alcohol had been substituted for part of the rum. It was declared misbranded because the label was false and misleading and likely to deceive the purchaser into the belief that the product was composed of rum and quinin, when as a matter of fact it was composed of rum, quinin and wood alcohol. It was further declared misbranded in that it bore a serial number that did not belong to the Monte Christo Cosmetic Company; and in that the label failed to bear a declaration of the quantity of alcohol the preparation contained. Albert Edelstein pleaded guilty and was fined $50.—[*Notice of Judgment No. 2321.*]

PEPSIN MAGEN BITTERS

Bettman-Johnson Company, a Cincinnati corporation, shipped from Ohio to Oregon a quantity of a product labeled "Pepsin Magen Bitters." The claims made for the stuff were to the effect that it "ranks among the best means for the preservation of activity of the digestive organs." It was further stated that "weakness of the stomach is mainly due to the scanty secretion of pepsin," and that in such cases the physician always prescribed pepsin. "Pepsin Magen Bitters" should be used because:

"A supply of Pepsin, as contained in these celebrated Bitters, in connection with some wholesome and strengthening bitter roots and herbs, will supply that deficiency and bring the stomach back to a normal condition."

When analyzed by the federal chemists, "Pepsin Magen Bitters" was found to contain 28.44 per cent. alcohol, 5.2 per cent. sugar, and less than 0.0001 grams of pepsin in each cubic centimeter of the preparation. "Pepsin Magen Bitters" were declared misbranded because the label conveyed the impression that the stuff contained a substantial amount of pepsin, when as a matter of fact, it contained only an infinitesimal quantity of pepsin, and it was further declared misbranded as the percentage of alcohol was not stated on the label. The Bettman-Johnson Company entered a plea of *nolo contendere* and was fined $25 and costs of $15.85.—[*Notice of Judgment No. 2222.*]

BAVARIAN MALT EXTRACT

A quantity of so-called Bavarian Malt Extract was shipped by the Kansas City Breweries Company from Kansas City, Missouri, to Nebraska. In addition to the name, "Bavarian Malt Extract," the label contained these claims:

"An unequalled health giving medical tonic."
"An excellent recuperant for weak physical energy, with the nourishing qualities of a pure extract of Malt and Hops."

Analysis by the government chemists showed that the preparation was misbranded, since instead of being a malt extract as claimed, it was essentially beer, containing 5.8 per cent. alcohol. The government further declared the stuff misbranded in that it led the purchaser to believe he was buying a foreign-made product, when as a matter of fact "Bavarian Malt Extract" was made at Kansas City, Missouri. The company pleaded guilty to both allegations and was fined $100 and costs.—[*Notice of Judgment No. 2258.*]

Correspondence

Testimonial to Lucas-Championnière

To the Editor:—I beg to call the attention of my fellow surgeons to a movement which has just been inaugurated for the erection of a monument to the late Prof. Just Lucas-Championnière. There is a large committee consisting of representative surgeons, such as Professors Delagenière, Delorme, Depage, Dollinger, von Eiselsberg, Ceccherelli, Chantemesse, Garrè, Gibson, Godlee, Hartmann, Robert Jones, Körte, Macewen, Michon, Labbé, Perier, Reverdin and many others from America and practically every country in Europe.

Championnière's important contributions to surgery are too well known for it to be necessary to recount them. He was more than friendly to all Americans who were brought into contact with him. I am sure that it will be a great pleasure to many American surgeons to contribute toward this international testimonial.

Contributions may be sent to M. Georges Steinheil, 2, rue Casimir-Delavigne, Paris, or if any of the contributors prefer, I shall be very glad to receive and transmit any such contributions.

W. W. KEEN, M.D., 1729 Chestnut Street, Philadelphia.

Presence in Urine of Dialyzable Products Reacting to Ninhydrin

To the Editor.—In THE JOURNAL, April 4, 1914, p. 1084, Jamison reports on experiments with urine to check up the article by Warfield (THE JOURNAL, Feb. 7, 1914, p. 436). Jamison's reports are at variance with a large number of tests which I made with urine, as the following facts will show:

Urines of various acidities were tested directly with ninhydrin. Acidities were determined by titration with tenth-normal sodium hydroxid solution: Four specimens of urine of acidity 33, 56, 91 and 123 degrees were positive with ninhydrin. These acidities represent a fair range. It is not frequently that a urine with so high an acidity as 123 degrees is found.

Jamison says that a urine which gives even a strongly positive ninhydrin reaction loses its power to react if made strongly acid by the addition of acetic acid, and that the reaction will not reappear when the urine is exactly neutralized by the addition of sodium hydroxid. To determine what might be the disturbing element, provided his statement is true, the following tests were made:

Urine plus one-third its volume of glacial acetic acid, plus ninhydrin, no reaction.
Urine plus sodium acetate, plus ninhydrin, typical reaction.
Urine plus sodium hydroxid plus ninhydrin, yellowish color.
Urine plus acetic acid, then neutralized exactly with sodium hydroxid, plus ninhydrin, original reaction.
Urine plus acetic acid, plus sodium hydroxid to very faint alkaline reaction, plus ninhydrin, no reaction.
Urine plus acetic acid, plus sodium hydroxid until just short of neutral, plus ninhydrin, typical reaction.
Urine plus 0.5 per cent. acetic acid, plus ninhydrin, typical reaction.

These experiments were repeated on a number of urines and were also duplicated with solutions of pure glycocoll. The results were always the same as above.

From the foregoing it is evident that a large excess of acetic acid (like hydrochloric, nitric, etc.), will interfere with the production of a color reaction. It is also evident that the reason Jamison failed to restore the ninhydrin reaction after acidifying was that he did not neutralize exactly, but used too much alkali.

It is well known that acids and alkalies dialyze readily. It is hard to conceive that an acid solution on dialysis would give a neutral dialysate. Experiments with urine, with diammonium hydrogen phosphate, with disodium hydrogen phosphate and with monopotassium hydrogen phosphate show the reaction of the dialysate to be always the same

as the reaction of the fluid in the dialyzer. From various causes the reaction of the urine in the dialyzer may change during the time allowed to dialyze, but we always find the reaction on both sides of the dialyzer the same.

I do not see wherein Jamison is justified in drawing the conclusion that after dialyzing the urine of *pregnant women*, the dialysate gives a positive reaction to ninhydrin. A negative reaction may also be found, for the same factors which interfere with the reaction in certain non-pregnant urines would also be found occasionally here.

One point which I wish to emphasize is that all urines contain some amino-acids and will give a ninhydrin reaction unless some interfering substances are found. It must not, however, be thought that when we get a blue color with ninhydrin, the presence of amino groups in alpha position to carboxyl is demonstrated. A large number of substances will give color reactions with ninhydrin; for instance, ammonia, ammonium carbonate, diammonium hydrogen phosphate, ammonium formate, ammonium acetate, ammonium butyrate, ammonium oxalate, ammonium succinate, etc. Such substances, however, as ammonium chlorid, and ammonium nitrate do not give a reaction.

Charles E. M. Fischer, M.D., Columbus, Ohio.

[This letter was referred to Dr. Jamison who replied:]

To the Editor:—Dr. Fischer entirely avoids the main issue of my recent article, which endeavored to show that the presence of dialyzable products in the urine reacting to ninhydrin is not diagnostic of pregnancy. He has attacked some minor points, however, so I will endeavor to answer him.

I stated that when a urine was strongly acid (to litmus) the ninhydrin reaction was often negative, and this is certainly true in my experience; I have seen an occasional exception when there was a large amount of amino-acids present. This is also the case when working with blood; in using the Pierce-Williams technic, great care must be taken not to add too much acetic acid, for the reaction will often be inhibited though the blood is known to give a positive reaction. Dr. Fischer appears to be mistaken on another point, as illustrated by the following: Suppose that one gets a positive reaction to ninhydrin in a specimen of urine prior to dialyzation; now to the same tube showing the characteristic blue color of the ninhydrin reaction, add acetic acid in moderately large amounts and it will be found that the blue color will soon fade; the fluid in the test-tube may now be exactly neutralized, but the blue color will not reappear. I am confident that Dr. Fischer did not follow this procedure. Further, suppose we test a specimen of urine from a known pregnant woman; this urine is found to be strongly acid to litmus and negative to ninhydrin, and though we now exactly neutralize this urine it will still remain negative, but if we dialyze out the amino-acids, the dialysate will give a positive reaction to ninhydrin. In such a case we are dealing with two factors which may inhibit the reaction, namely, the acidity and some unknown inhibiting substance. The reason that the reaction will appear in the dialysate is, probably, that the amino-acids will dialyze through, but not the inhibiting substance. The reason that the dialysate is nearly always neutral to litmus is that the acid substances are so largely diluted by the water on the outside of the membrane (it is to be remembered that only 2 c.c. of urine are used, and 10 c.c. of water), that their reaction is not perceptible by so coarse a means as litmus, though I have no doubt that acidity can be demonstrated by more delicate means. If a urine gives a strong reaction to ninhydrin and then is made so acid that the reaction disappears, and then again the acidity is exactly neutralized, of course the reaction can be obtained in another specimen of this acidified-alkalinized urine.

This seems to be Dr. Fischer's main ground for criticism, and I admit that there may have been some ambiguity in the wording of my original paper on this particular point; at any rate, Dr. Fischer mistook the sense of my article, as set forth above.

After dialyzing the urine of pregnant women, I have never found one to give a negative reaction to ninhydrin; and if Dr. Fischer has found this not to be the case he should have stated it specifically. From the examinations that I have made I see no reason for altering this conclusion. I have found the reaction negative in the dialysates from the urine of non-pregnant women and also of men.

Theoretically it is true that all urines contain traces of amino-acids, but, in my opinion, drawn from experiments as set forth in my original paper, *not all urines will give a positive reaction to ninhydrin*, probably because the amount normally present is infinitesimal.

Chaillé Jamison, M.D., New Orleans.

Painless Parturition

To the Editor:—The suggestion of Dr. C. D. Daniels (The Journal, May 2, 1914, p. 1420), concerning the use of nitrous oxid in parturition, is based on faulty technic. When nitrous oxid is administered with sufficient oxygen to maintain normal oxygenation of the blood, there is no increase in respiratory difficulty with the infant. In nitrous oxid administration, proper oxygenation is relatively as essential an element of safety as is asepsis in surgical technic, and in this day it ought not to be considered necessary to reiterate continually such essential requisites.

Raymond C. Coburn, M. D., New York.

Queries and Minor Notes

ABDERHALDEN'S SERODIAGNOSIS IN PSYCHIATRY

To the Editor:—Please describe the technic for preparing nervous tissue for use in Abderhalden's serodiagnosis in nervous affections.

W. S. Lorenz, M.D., Milledgeville, Ga.

Answer.—The theoretic basis of this test is the assumption that a protective ferment is formed in the organism against cells or protein which have entered the blood from a degenerated organ. In the test for pregnancy a ferment formed by the maternal system against placental tissue is tested for on the supposition that cells from the placenta find their way into the blood of the mother and excite the formation of a specific ferment capable of decomposing them. Similarly it is supposed that in dementia praecox the brain cortex becomes degenerated and furnishes cells or substances to the blood which act as foreign bodies. The presence of these substances excites the formation of a ferment capable of decomposing the proteins of the human brain. In a similar manner the tissues of the genital glands, which are more or less affected in dementia praecox, are subject to digestion by a similar ferment. These ferments are so specific that the ferment of one sex will not affect the glands of another sex, that is, the serum of a woman will not digest testicular tissue nor will that of a man digest ovarian tissue. Experiment has shown that the organs of animals cannot be used in this test. The organs to be used should be taken from cadavers of persons who were not cachectic and the necropsy should have been made within a few hours (from six to twenty-four) after death. The organs should be taken from the cadaver of a patient who has not died after a long agony and has not suffered from an infection or high fever shortly before death. The organs should be removed with aseptic precautions. Organs containing much fat are not well suited to the test. If the tissue contains considerable fat, it should be removed in a Soxhlet apparatus. The material should be cut into pieces of moderate size (size of a bean) and washed repeatedly until the wash-water gives no reaction with ninhydrin. The washed material should be cut into fine pieces and tested again after thorough washing.

The pieces should then be boiled and tested, and if free from substances reacting with ninhydrin, they should be preserved in the water in which they have been boiled between a layer of chloroform and a layer of toluene.

The incubation and testing are performed in the same manner as when testing for the serodiagnosis of pregnancy. The greatest care must be taken to see that the dialyzing

thimbles are permeable and entirely free from any substance which can give the ninhydrin reaction. Especially they should be entirely free from any adhering tissue used in previous tests. A control test should be made with a piece of the tissue and normal serum, and also a test should be made of the serum alone.

The following articles dealing with this subject may be referred to:

Fauser, A.: Einige Untersuchungsergebnisse und klinische Ausblicke auf Grund der Abderhaldenschen Anschauungen und Methodik, Deutsch. med. Wchnschr., Dec. 26, 1912, p. 2446.

Fauser, A.: Weitere Untersuchungen (3. Liste) auf Grund des Abderhaldenschen Dialysierverfahrens, Deutsch. med. Wchnschr., Feb. 13, 1913, p. 304.

Fauser, A.: Zur Frage des Vorhandenseins spezifischer Schutzfermente in Serum von Geisteskranken, München. med. Wchnschr., March 18, 1913, p. 584.

Wegener: Serodiagnostik nach Abderhalden in der Psychiatrie, München. med. Wchnschr., June 3, 1913, p. 1197.

Schiff, Erwin: Ist das Dialysierverfahren Abderhaldens differentialdiagnostisch verwertbar? München. med. Wchnschr., June 3, 1913, p. 1197.

Fauser, A.: Die Serologie in der Psychiatrie, München. med. Wchnschr., Sept. 9, 1913, p. 1984.

Bundschuh, Rudolph, and Roemer, Hans: Ueber das Abderhaldensche Dialysierverfahren in der Psychiatrie, Deutsch. med. Wchnschr., Oct. 16, 1913, p. 2029.

Fischer, Joannes: Weitere Untersuchungen mit dem Abderhaldenschen Dialysierverfahren an Geisteskranken, Deutsch. med. Wchnschr., Oct. 30, 1913, p. 2138.

Beyer, B.: Ueber die Bedeutung des Abderhaldenschen Dialysierverfahrens für die psychiatrische Diagnostik, München. med. Wchnschr., Nov. 4, 1913, p. 2450.

DURATION OF PREGNANCY

To the Editor:—A woman aged 23, unmarried, said that she had had sexual connection July 26, 1913. She was confined March 6, 1914. Child full term and healthy. Time 224 days. Could a full-term child be born in that time? We are taught that from 270 to 290 days is the normal time, but this falls 46 days short of 270 days.

J. E. C., M.D., Missouri.

ANSWER.—The query involves two questions. 1. What is the shortest recorded period from coitus until the birth of an apparently fully developed child? 2. To what extent is it possible to determine the length of intra-uterine life from the appearance of the child at birth?

J. W. Williams (Obstetrics, p. 202) states that Ahlfeld analyzed 425 cases in which the date of coitus was supposed to be known and found the average duration of pregnancy to be 269.91 days, but individual cases in the series varied between 231 and 329 days. According to Peterson and Haines (Legal Medicine and Toxicology, i, 66) Reid has collected the histories of forty cases of pregnancy in women in whom impregnation was the result of a single intercourse, the date of which was accurately known. Of these cases five fell within the thirty-eighth week, from the 260th to the 266th day. They also cite the investigation of Montgomery, who collected the histories of fifty-six cases of pregnancy in which the date of fruitful intercourse was known, of which one case fell in the thirty-fifth week, between the 239th and 245th days. Peterson and Haines further say: "There is therefore no absolute figure that may be stated as the positive duration of pregnancy in the human female. In some women eight calendar months is the full period to which they can carry their young, while others invariably go well beyond the average of 280 days. Thus, while the average may be as stated, normal gestation may last but 240 days, or be extended to 300 days or longer."

In Austria the law recognizes the legitimacy of the child born within from 240 to 307 days of the death of the father. Schroeder and also Winckel admit 240 days as the lower limit for the duration of pregnancy (Witthaus and Becker, ii, 514, 515).

From casual observation it is hardly possible to determine whether an infant at birth has had seven or nine months of intra-uterine life. Even an expert observer would not be safe in stating that an infant apparently fully developed had had more than eight months of intra-uterine existence. J. Clifton Edgar, in Witthaus and Becker's "Medical Jurisprudence, Forensic Medicine and Toxicology," ii, 526, quotes Tidy as follows: "It is manifest that the medical jurist would scarcely be justified in pronouncing a positive opinion that a seven months' child might not be as well developed as an eight or nine months' child under ordinary circumstances."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

DELAWARE: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

GEORGIA: Atlanta and Augusta, June 3. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 3-5. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 4-6. Sec., Dr. E. L. Leckert, Maccheca Bldg., New Orleans.

MARYLAND: Baltimore, June 15. Regular Board: Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic: Baltimore, June 15. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

MICHIGAN: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

MISSOURI: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEBRASKA: Lincoln, May 27. Sec., Dr. H. B. Cummins, Seward.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW YORK: May 19-22. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NEW YORK: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

OHIO: Columbus, June 2-5. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Philadelphia, June 1-3. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

SOUTH CAROLINA: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

TEXAS: Austin, June 23-25. Sec., Dr. W. L. Crosthwaite, Waco.

VIRGINIA: Richmond, June 23-26. Sec., Dr. Herbert Old, Nofolk.

Texas November Report

Dr. W. L. Crosthwaite, secretary of the Texas State Board of Medical Examiners, reports the written and practical examination held at Houston, Nov. 11-13, 1913. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 45, including 3 osteopaths, of whom 42 passed, including 3 osteopaths; 2 failed and one candidate did not complete the examination. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Alabama	(1904)	76.6
George Washington University	(1912)	87.5
Howard University	(1913)	84.6
University of Illinois	(1913)*	
Hospital College of Medicine, Louisville	(1904)	78.4
University of Kentucky	(1910)	86.7
Tulane University	(1912) 84.7, 87.1; (1913) 85, 85.5, 87.7,	89.5
Maryland Medical College	(1910)	78.8
Harvard Medical School	(1899)	82
Kansas City Hahnemann Medical College	(1913)	77
University of Pennsylvania	(1895) 84.1; (1907) 87.3; (1911) 87.7,	89.7
Meharry Medical College	(1912)	75, 75.5
Memphis Hospital Medical College	(1901) 84.7; (1911) 82; (1913) 77.6, 80.6, 82.	
University of Tennessee	(1911)	79
Vanderbilt University	(1912)	82.3
Texas Christian University	(1913) 82, 83.1, 86.1,	*89.7
University of Texas	(1913)	83.9, 85
Medical College of Virginia	(1909)	82.1
University College of Medicine, Richmond	(1912)	86.4
University of Toronto	(1891)	85.4
University of Berne, Switzerland	(1905)	87.8

FAILED	
Hospital Medical College, Eclectic, Atlanta	(1910)*
Meharry Medical College	(1910)*
Undergraduate	†

* No grade given.
† Did not complete examination.

Colleges Given Higher Rating

In recognition of a definite reorganization and of marked improvements made in the Southern Methodist University Medical Department of Dallas, Tex., and the Texas Christian University Medical Department of Fort Worth, Tex., the ratings of these colleges have been raised to Class B by the Council on Medical Education.

Book Notices

New and Nonofficial Remedies. Containing Descriptions of the Articles Which Have Been Accepted by the Council on Pharmacy and Chemistry of the American Medical Association Prior to Jan. 1, 1914. Cloth. Price, 50 cents. Pp. 362. Chicago: American Medical Association, 1914.

The success of the physician of to-day depends to a large extent on the wisdom with which he discards remedies which have been proved of little worth in the past. We refer especially to those which have been given a place in the Pharmacopeia, and therefore bear the sanction of authority. Even greater discrimination, however, must be shown in selecting from the new therapeutic agents, proprietary or non-proprietary, those in which confidence can be placed. As an aid in deciding this question, New and Nonofficial Remedies is worthy of adoption by every practicing physician. As a result of the investigations of a large corps of scientists and practical physicians, it carries the assurance that the remedies which it describes are honestly made and marketed and that the therapeutic claims are reasonable and worthy of attention.

When the book was first published, preparations were arranged alphabetically; but in the present edition a more complete classification has been made and those remedies of like character have been grouped together so that the work is like a text-book of materia medica rather than an extra pharmacopeia. Dosage-forms as well as the basic preparations are enumerated. A change of arrangement of the individual articles puts the matter in which the physician is chiefly interested at the beginning in large type, and relegates details of preparation, chemical properties, tests, etc., to the end of the article. This change, we believe, will be generally approved. A study of the contents shows that the Council has neglected no therapeutic advance. Perhaps the most striking feature is the expansion of vaccine therapy as shown by the number of such preparations that are given a place. Salvarsan and other arsenic preparations are also satisfactorily considered. While a considerable number of special radium preparations have not yet been admitted, a general article on the metal itself gives an amount of reliable scientific information not easily found elsewhere.

If we might offer a suggestion, it is that more definite statements regarding therapeutic properties be made. Therapeutic effects that are well established no longer need to be prefaced by the cautionary phrase, "It is claimed," or "It is stated." A careful estimate of those proprietaries which have stood the test of experience, giving their relative therapeutic worth, would be of inestimable value to the medical men who realize that they obtain in this book reliable and authoritative statements concerning nonofficial remedies.

American Red Cross Abridged Text-Book on First Aid. Woman's Edition, Police and Firemen's Edition, Railroad Edition and Miners' Edition. By Major Charles Lynch, Medical Corps, U. S. Army. Paper, Price, 30 cents net. Pp. 148, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

These paper-covered pamphlets, edited by Major Charles Lynch, were prepared and endorsed by the American Red Cross for distribution to the public. Each of the four recently issued contains directions, illustrations and other material specially suitable for the class for which it is prepared. Each edition contains general first-aid directions, and chapters on bandages, injuries in which the skin is not broken, injuries in which the skin is broken, bleeding, injuries due to heat and cold, suffocation and artificial respiration and poisoning, as well as a chapter on common emergencies and one on transportation of the sick and injured. In addition, each pamphlet contains special material suited to its particular purpose.

Miscellany

COOPERATION AMONG DOCTORS

H. B. Knapp, M.D.
IONIA, MICH.

In order that physicians using modern methods of diagnosis and treatment may properly equip themselves for their labors, they must first spend a considerable sum of money on equipment. Some appliances, such as a cystoscope or a microscope, are not in constant use and may not be used for days at a time. To tie up money in expensive apparatus to be made use of only occasionally often keeps men from purchasing even quite necessary appliances.

The income of the average physician will not permit the purchase of anything like the needed equipment, and yet it

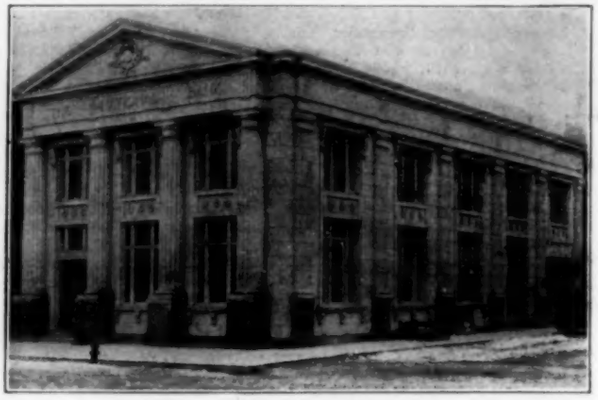


Fig. 1.—Ionia City Hospital (on the second floor).

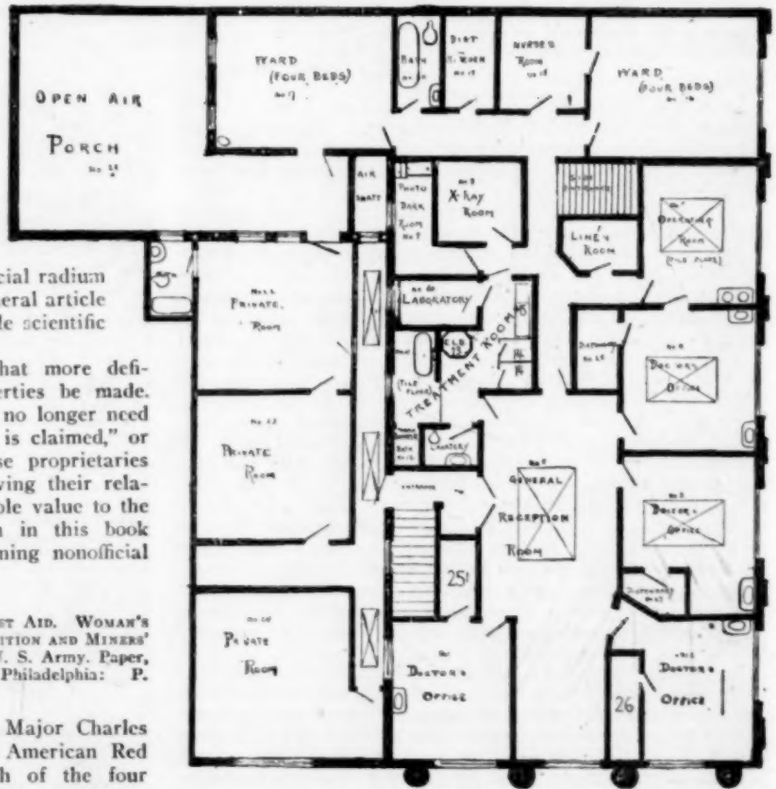


Fig. 2.—Floor plan; 13, electric light bath; 14, dressing-rooms; 15, massage table; 25 and 26, dispensaries.

is the average doctor (who attends the great bulk of sick persons) who needs equipment to make his work accurate and positive.

Individual physicians might economize effectively by utilizing the benefits to be derived from cooperative methods. To carry out this idea, not only in office equipment, but also in supplying hospital facilities where there are none, four physicians in Ionia, Mich., a city of 7,000 inhabitants, have associated themselves together on a cooperative basis. When a little more than a year ago a new business block was to be built (Fig. 1), the second floor was leased and the floor plan specially arranged and developed as shown (Fig. 2). A general reception room accommodates the patients of all four physicians. Consulting and dispensing rooms are provided for each doctor. In connection with the offices is a ten-bed hospital, consisting of two wards of four beds each, two private rooms, an operating room, a Roentgen-ray room with a dark room, a chemical laboratory, and a hydrotherapeutic treatment room. A trained nurse looks after the hospital, keeps supplies made up, and assists in the offices.

The convenience of hospital facilities in conjunction with the physicians' offices adds comfort to both patient and physician.

Each member of the staff pays especial attention, though not exclusively, to certain branches of medicine, and whenever convenient, refers cases to the physician whose special study best fits him to handle the case. Each man is expected to spend some time away each year in study, while the interests of the absent member are looked after by the remainder of the staff. Staff meetings are held for the discussion of difficult or perplexing cases and for the exchange of ideas.

The purchasing of diagnostic and therapeutic appliances, books, journals, etc., without duplication, affords a much greater equipment for the same money than if the buying were done individually. Drugs and hospital supplies, of course, are bought at better rates than the average doctor buys, ordering in smaller quantities.

The association permits each man to practice as an individual and not on a partnership basis, except so far as the hospital equipment and maintenance is concerned. The staff as a whole concentrates its study at times on some particularly difficult case, each member giving his effort toward a solution of its problems with a minimum of cost to the patient.

An effort has been made to gather together under one roof all the needed diagnostic and therapeutic appliances often beyond the reach of the average doctor practicing alone, and by special study and effort make them available for the largest number of sick and for the accomplishment of the greatest good.

In many small towns and cities without hospital facilities, and even in the larger cities, I believe that this plan would be helpful to both patient and physician, just in proportion to the amount of unselfish effort put into it.

Little Mothers' Clubs

The *Bulletin* of the Chicago School of Sanitary Instruction, April 4, contains a schedule of the subjects covered in the instruction of the children in public schools who have joined the Little Mothers' clubs. Among the subjects considered are: home sanitation, how to handle a baby, the baby's bed, clothing, bathing, feeding, modification of milk, summer care of babies and a number of other topics. These clubs have been established in twenty-one of the public schools of the city and one settlement house. There are forty separate classes attended by about four thousand girls of the sixth, seventh and eighth grades. Additional clubs will be established from time to time and it is the intention to have one in every city school. The children manifest a most intelligent interest in these classes and in the instruction offered, and it is believed that the Little Mothers' Club idea will accomplish much good, not only in the way of educating the children in taking care of the babies in their homes but also in the general educational effect it will have on the whole family in matters of hygiene.

Medicolegal

Employment of Physician by Claim-Agent

(Pritchard vs. Old Colony Street Railway Co. (Mass.), 103 N. E. R. 692)

The Supreme Judicial Court of Massachusetts holds that a judgment should be entered for the plaintiff for medical attendance on one Rice, it having been stipulated that such judgment might be entered if, on all the evidence properly admissible and admitted, the court should find that the case should have been given to the jury. The court says that Rice was injured while in the employ of the defendant, and was brought to the plaintiff's office for treatment. No assertion was made that the defendant was liable for the injury, and Rice was taken to the plaintiff's office because he said that the plaintiff was his family physician and he wanted to go to him. There was evidence, to the admission of which the defendant excepted, tending to show that a few days afterward one Silvia, a claim-agent or adjuster for the defendant, called at Rice's house and asked him what physician he had and told him that he could have the company's physician, but that, so long as he wanted Dr. Pritchard, to keep him right along. The plaintiff continued to treat Rice at his home and after he was taken to a hospital, but before he was taken to the hospital the plaintiff had Mrs. Rice ask Silvia's permission, which was given, and whether the defendant would foot the bills, and the reply was in the affirmative, and the company did pay the hospital bill, through Silvia. Subject to the defendant's exception, evidence was introduced by the plaintiff tending to show that he had treated injured employees brought to him by a former claim-adjuster and by Silvia, and that the defendant had paid him for all such cases. Later in the course of the trial this evidence was limited to cases brought by Silvia. The court thinks that the evidence that was excluded should have been admitted. It was admissible, it seems to the court, in connection with other evidence that was introduced, for the purpose of showing the extent to which the defendant had held out and recognized the claim-adjusters as having authority to take employees who had been injured to the plaintiff, and as showing how far the plaintiff was justified by the course of dealing in assuming that the claim-adjusters had such authority, and in dealing with them on that footing. It was for the jury to say whether, taking the whole course of dealing between the plaintiff and the defendant into account, including the payment by the defendant of the bill at the hospital, Silvia had apparent authority to deal with the plaintiff as he did. Silvia testified that neither he nor the previous adjuster had authority as claim-adjuster to engage physicians to attend cases for the defendant, but the jury were not bound to accept his statement as to his authority. They could also take into account the fact that no explanation was offered by the defendant, so far as appeared, of the payment by it of the bill at the hospital. If Silvia had apparent authority to deal with the plaintiff, then the conversation with him that was objected to was properly admitted.

Powers Conferred on Boards of Health by Quarantine Law

(People vs. Tait (Ill.), 103 N. E. R. 750)

The Supreme Court of Illinois reverses, for a defective information, a conviction of the defendant for violating a quarantine regulation of a county board of health.

Taking the statute into consideration, the court thinks the "rules and regulations" which boards of health are authorized to make must be written rules, adopted in an official manner, and duly entered of record. To hold otherwise would be to give the legislation a construction which would render it invalid.

All of the counts of the information were open to the objection that there was no positive averment that a valid rule had been adopted, declaring a quarantine which would include the residence of the defendant. The existence of a single case of scarlet fever, however, is sufficient to call the powers of the board into action.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Gynecological Society, Boston, May 19-21.
American Laryngological Association, Atlantic City, May 25-27.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Medico-Psychological Association, Baltimore, May 26-29.
American Orthopedic Association, Philadelphia, June 18-20.
American Otological Association, Atlantic City, May 27-28.
American Pediatric Society, New London, Conn., May 26.
American Proctologic Society, Atlantic City, June 22-23.
American Society of Tropical Medicine, Boston, May 29-30.
American Therapeutic Society, Albany, May 29-30.
American Urological Association, Philadelphia, June 18-20.
Arkansas Medical Society, Eldorado, May 19-22.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Connecticut State Medical Society, New Haven, May 20.
Illinois State Medical Society, Decatur, May 19-21.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
National Association for the Study of Epilepsy, Baltimore, May 25.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.
Rhode Island Medical Society, Providence, June 4.
South Dakota State Medical Association, Watertown, May 26-28.

NEW YORK ACADEMY OF MEDICINE

Meeting held April 6, 1914

The President, Dr. William M. Polk, in the Chair

A Study of the Movements of the Intestines under Artificial Circulation

Dr. Gustave T. Monod, Vichy, France: The work of Carnot and Glénard, in transfusing the intestines of a cat, has shown that the serum of a cat purged with senna has the power of starting in another organism marked peristalsis, the movements of the cecum, and especially the rhythmic movement of every pouch. Not only do the pouches bulge, but there is a decided movement of the appendix. In regard to enteroptosis it seems probable that incompetence of the intestinal wall leads to a lowering of the intra-intestinal tension, and to visceral prolapse. The prolapse begins with the intestines, and then the descent of other organs follows, the right kidney, stomach, liver and spleen, for these organs are interdependent both as regards their suspension in the abdomen, and as regards their function, circulation and innervation. Intestinal prolapse, which is pathognomonic, is rarely primary, but is secondary to causes which are either infective or toxic. Movable kidney is not a separate malady but only a frequent symptom of enteroptosis. British treatises label as enteroptosis, or Glénard's disease, only cases of dislocation of all the abdominal organs, while in truth this is only the last and most severe phase of the disease and is a very rare occurrence. The common form is marked by one or two symptoms only, for instance, coloptosis and nephroptosis. Glénard classifies movable kidney in the large family of "hepatism." This view is supported by the fact that the etiology, symptomatology and treatment of enteroptosis on the one hand, and the inadequacy of the bile function on the other, authorize by their similarity this doctrinal theory. Enteroptosis is a malady of nutrition. The subjective symptoms support this statement. The most conspicuous objective symptoms are a delimitable and palpable cecum, the great relief that occurs when the abdomen is mechanically supported, and very often, a movable kidney. We are still waiting for a single case in which the movable kidney syndrome can be demonstrated to be due to movable kidney alone. On the other hand, we are prepared to show scores of cases in which movable kidney was not the cause of the symptoms observed, and these were the cases in which all the troubles disappeared and the kidney remained unfixed. A new syndrome which Crile discovered through experimental work and I through clinical observation is that of insufficiency of liver, adrenal and brain together.

DISCUSSION

Dr. Jacob Kaufmann: A great deal of confusion prevails as to the meaning of enteroptosis. In France it is explained as caused by "hepatism," a term with which Americans are not familiar. The prevalent idea in America is that there is more of a mechanical derangement which is paramount in the production of enteroptosis. I do not believe that any abdominal displacement constitutes disease; abdominal displacements do not necessarily produce symptoms. The stomach and colon may be situated deeply and yet perform their functions in a perfectly normal manner. Enteroptosis in the majority of cases is found in persons who show other traits as well, who are subject to certain functional disturbances. I believe that the best definition of this condition is "a general congenital asthenia." These patients develop neurasthenia as well. There is a marked tendency to an atonic condition of the gastro-intestinal canal associated with secretory disturbances, but also some functional derangement of the liver caused by some disturbance of the internal secretions. The blood-pressure is usually low in the development of this atonic condition. As to treatment, the application of the belt is helpful, but these patients should be treated as general neurasthenics not only by dietetic means but medically too. The tendency to develop asthenia of various organs, not the displacement of the abdominal viscera, is the paramount factor of the condition.

Dr. Max Einhorn: As early as 1889 or 1890 I demonstrated this condition by gastrodiaphany. Stiller's conception of enteroptosis is that it is a congenital disease, but it may be an acquired disease as well. Causes which produce enteroptosis may be removed by the application of methods which are apt to produce reversed conditions. Loss of fat and other tissue with the attendant change in configuration after typhoid, or in women getting up too soon after childbirth and with improper bandaging, may produce the condition, and these instances prove that enteroptosis may be acquired. By building up the body and putting on flesh the condition may be cured. When enteroptosis is associated with cardioptosis, if one builds up the body, the heart will return to its normal position more quickly than any other organ. If enteroptosis is purely a congenital condition it would be impossible to alter the position of the heart. Is enteroptosis a disease or not? I have found prolapsed kidneys, liver, stomach and other organs at times without any symptoms whatever; that is not saying that the condition was normal; it is abnormal and gives rise to the development of abnormal changes and functional disturbances.

In regard to treatment I am in accord with Glénard, who lays emphasis on an ample amount of food, building up the patient, and increasing his size, not only by increasing the amount of fat but by building up the muscular system as well. Bandaging is of secondary importance. The bowels should be regulated, but the aperient waters at spas, etc., do not play a great part.

Dr. George R. Lockwood: Enteroptosis is interesting from a geographic point of view and appears to differ in various countries. The whole proposition of enteroptosis might be simplified. Mankind can be divided into two classes: (1) those with broad costal angles and a transverse stomach—robust individuals, and (2) those with narrow costal angles and vertical stomachs—the thin, nervous individuals. Such a condition of ptosis suggests a reversion to the embryonic type. Gastroptosis produces no local symptoms until the stomach becomes atonic, to which condition it has been predisposed by reason of the nervous instability of that type of case, and when atony advances, symptoms of alimentary toxemia usually intervene.

Dr. J. W. Draper: From the point of view of surgical therapeutics the alimentary canal is divisible into three regions: (1) the duodenum and oral portion of the jejunum—bacterially dead, biochemically alive; (2) the aboral and terminal ileum, and (3) the cecum and colon—biochemically dead, bacterially alive. The duodenum concerns us for two reasons: first, because of its ulcers, the etiology of which is still unknown; and, second, because of its enzymes,

hormones and other biochemical bodies which bear so striking a relation to the cause of death in intestinal obstruction, and which stand in significant relation to the causation of duodenal ulcer. Undoubtedly we are right in teaching that in dealing with the oral part of the intestine, as the creation of a gastro-enterostomy for the relief of duodenal ulcer, the subtlest biochemical relations are altered, and this alteration affects the cure rather than the much overrated gastric drainage, thought by some to result from operation. Likening the small intestine to a test-tube, the fiery biochemical reactions of the duodenum may be said to cool in the jejunum and to chill in the ileum. Terminally they are nil, and the chief, if not the only, intestinal function, is conduction. Jerome Lynch has shown that in human beings the streak of chyle passing to the cecum is not continuous, but intermittent, strongly suggesting the squirting of stomach contents into the duodenum, and that the ileal contents are solid or fluid, depending wholly on the diet. On a nitrogenous diet they are fluid; on a mixed diet, well-formed and often solid. Lynch has further shown that the reaction of the ileal contents is always acid, that of the mucous membrane always alkaline or neutral. Significant corroboration of these studies is found in the field of surgery. Ileostomy is always followed by a gain in weight.

The cecum and colon being biochemically dead and bacterially alive hold an interest equal to and in inverse proportion with that of the duodenum. The therapy of this part is concerned with its evacuation. Cannon said that surgeons operate on the human alimentary canal as though it were a simple system of rubber tubes in which holes could be bored at will, rather than an indescribably complex physiologic mechanism. In no part of the canal is the truth of this saying better shown than at its termination. In extreme ignorance of its functions, the colon has been excised, twisted and contorted into bizarre shapes, in the well-intentioned but ill-directed efforts to hasten its emptying. The whole question of the surgical therapy of the colon hinges on the little-understood problem of anastalsis. Dr. George Stewart has recorded the most direct and amazing proof of human colonic anastalsis occurring in a man who, as was his custom, was removing impacted feces from his rectum with a pencil; suddenly he felt the pencil gripped by the bowel and the next instant it was lost in the rectum. Three days later Dr. Stewart could not find the pencil with the proctoscope and opened the abdomen. It was lying not in the sigmoid or colon, but in the cecum. Excess in anastalsis may be the predominant factor in certain types of constipation.

DR. LEWIS GREGORY COLE: A stomach though greatly collapsed may functionate well. I wish to emphasize the relation between the level of the chyme in the stomach and the position of the cap (first portion of the duodenum). This is very important because if the pylorus as well as the stomach were prolapsed, gastric evacuation would take place on scheduled time. If, on the other hand, the pylorus were high and the stomach prolapsed, gastric retention might result.

INTERNATIONAL SURGICAL ASSOCIATION

Fourth Congress held in New York, April 13-16, 1914

(Concluded from page 1503)

SYMPOSIUM ON GRAFTS AND TRANSPLANTATIONS

Grafts in Plastic Surgery

DR. H. MORESTIN, Paris: Grafts and transplantations have enabled us to remedy many grave deformities, and hold out hope for a future of marvelous progress. Free cutaneous grafting succeeds fairly well when a small fragment taken from a soft thin skin and deprived of its panniculus is applied on a strictly aseptic living surface. The indications are very limited, especially in the reparatory surgery of the face, on account of the trophic disturbance of the graft and the yellowish or whitish coloration which the graft preserves indefinitely. The Italian method must remain an exceptional method even for rhinoplasty and blepharoplasty; its triumph is in the reconstruction of the lobule and the partition of the nose by the help of skin from the palmar surface of the hand. Dermo-epidermic grafting has innumerable indications in the treatment of superficial wounds, especially those which by their extent prevent true methods of autoplasty, as in great loss of substance following burns, traumatisms, removal of tumors, etc. They alone enable the healing of wounds caused by the tearing and complete destruction of the scalp. They are particularly recommended after the excrescences of cancers of the skin in old persons. In the surgery of lupus they constitute a last resort, and they promise but mediocre results in the treatment of scar deformities. Dermo-epidermic grafting combined with other methods of autoplasty may be advantageous. The grafting of hairy parts is attainable either by free transplantation or by the means of a fragment, the last method being preferable. By this means the eyebrow and even the mustache may be restored.

Transplantations of cartilage have solved the problem of total rhinoplasty. Cartilage shows great power of absorption, preserves its life during an indefinite period and is the only one of its kind among transplanted tissues. Doubtless other restorations in addition to that of the nose will be benefited by cartilaginous grafting in serious destruction of the facial structure. Adipose graftings are excellent for filling up empty spaces, bony hollows and depressions of the soft parts, and therefore render great service in the repair of cranial gaps and facial deformities. Fatty tissue with few and almost inert blood-vessels is one of those tissues most easily transplanted from one place to another. The transplant is almost always made use of, though after a more or less short struggle it succumbs, and is replaced progressively by tissues of new formation to which it serves as a protection. This form of grafting is a valuable acquisition to esthetic and reparatory surgery.

Vascular Grafts

DR. E. VILLARD, Lyons: There are two kinds of graftings, extemporaneous grafting and the grafting of preserved vessels. The result of a graft is to be appreciated from both the macroscopic and the microscopic points of view. It is possible to have an excellent functional result, and yet the microscope may reveal profound lesions on a segment macroscopically healthy. From the point of view of technic, Carrel's process gives the maximum guarantee. Arterial homoplastic grafts give good results macroscopically, but the histologic lesions seen after the lapse of some time places reservations on the vitality of the vascular graft transplanted from one animal to another of the same sort. Arterial heteroplastic grafts are possible, but it appears that the graft serves only as a protection to a process of reparation on the part of the animal undergoing the grafting. Venous grafts are possible but are more difficult to realize than arterial grafts. The grafted venous segment becomes hypertrophied, and undergoes histologic changes which seem a step toward the arterial structure. Some preserved vascular fragments may be grafted with success, but only their elastic frame is grafted, which is susceptible of being absorbed by the cellular elements arising from the grafted subject. Vascular grafting may be applied to human surgery in the course of vascular traumatism, in the extirpation of a tumor adherent to the large vessels, and in the cure of aneurysm. If the indications exist to perform a vascular grafting in man, one should have recourse by preference to an autoplastic, particularly to a venous, grafting.

Grafts and Transplantations

DR. ULMANN, Vienna: The hopes raised fifteen years ago on the future of the transplantation of tissues and organs have been only partially realized. Heteroplasty seems to meet anaphylaxis as its principal obstacle, while homoplasty encounters the biochemical properties of the individual.

Heteroplastic transplantations, with the exception of bony tissues, always gives bad results. Besides, the bone itself does not remain but is replaced by the bony tissue of the

grafted material. The results of homoplastic transplantations are variable; given identical quantity of sanguineous serum from the cellular protoplasm of two subjects in the same condition, homoplasty may probably give as satisfactory results as autoplasty.

Grafts and Transplantations

DR. E. LEXER, Jena: The various tissues used in grafting are differently appreciated by practitioners and pathologists. An excellent clinical result may be preserved not only if the graft takes but if it disappears, giving place to tissues of substitution, and sometimes if completely surrounded by adhesions. The graft may be expelled in cases of failure, or it may disappear before the process of substitution has taken place, or the substitution may confine itself to the formation of scar tissue. The cause of failure apart from suppuration rests principally in the existence of small blood-clots which prevent the transplanted part from becoming normally established. Some of the conditions necessary for a good implantation are vitality, nutrition, power of acclimatization and the strength of the transplant for sufficient regeneration, as well as the condition of the wound on which the transplant is made. The value of epidermic and cutaneous homoplasty is very slight and its results doubtful.

Transplantation of Organs

DR. ALEXIS CARREL, New York: Autoplastic transplantations of the kidney have been performed with complete success in dogs. It was found that in most instances the animal remained in the best of health. A female dog that underwent a double nephrectomy and replantation of one kidney remained in perfect health, had a number of pups, and died of intercurrent disease almost two and one-half years after the operation. Microscopic examination of the kidney showed that it was entirely normal. By this and similar experiments it has been definitely proved that the extirpation of the kidney, its perfusion in Locke's solution, complete interruption of the circulation for from fifty to sixty minutes and the suture of its vessels and ureter does not interfere with its function. In homoplastic transplantations of the kidneys the results are different; after six or seven days, albumin appears in the urine and the kidney becomes congested. After twenty-five or thirty days there is a great deal of albumin, and in one instance there was hematuria. After seven or eight months the albumin disappears, but the kidney is found to be in a sclerotic condition. When the animals undergo a bilateral nephrectomy they always die within a few weeks. It is possible that by using animals that are closely related, as mother and son, better results can be obtained. The present aspect of the problem is to find the causes of the reaction of an organism against a new organ and to discover by what means this reaction may be prevented and the organ become adapted to its new owner. Some of our experiments indicate that general infection in animals seems to prevent the reaction of the organism against the new organ, and it is thought that the factors which are instrumental in the reaction of the organism against foreign tissue are the same as those used to fight a general infection, and that when this mechanism is engaged in fighting a general infection the transplanted organs are able to become adapted to the new organism. The studies of James B. Murphy of Rockefeller Institute along this line make it seem probable that it is the action of the spleen and the bone-marrow which allow the organism to fight efficiently the foreign tissue which has been transplanted on it, and that when the action of these organs is less active a foreign tissue can develop rapidly after it has been grafted.

PROF. A. DEPAGE, Brussels: My assistant, Dr. Danis, sought to restore the wall of the gall-bladder by the application and suture of a graft taken from the wall of the jugular vein, and in a second series of experiments he substituted a segment of the jugular vein for a portion resected from the choledochus. The restoration of the vesicle wall by the application of a venous graft succeeded in most instances. The operation was relatively easy, and the cicatrization assured the vitality of the graft. From the histologic point of view the external surface of the transplanted vein recovered a new endothelium. On the internal surface the mucosa developed little by little on the graft and finally was entirely recovered as in a simple cicatrix. The substitution of a segment of vein for a portion of the choledochus was more difficult to effect. Dr. Danis after making the attempt a number of times succeeded in keeping alive dogs in which he had removed the gall-bladder with the common bile-duct and established a communication between the hepatic canal and the ampulla of Vater by interposing a segment of the jugular vein. By the examination of specimens several months after operation Dr. Danis was able to prove the viability of the venous graft and its perfect transformation into a biliary canal.

DR. K. A. J. MACKENZIE, Portland, Ore.: I had a patient with Recklinghausen's disease five or six years ago who developed a tumor on the sciatic nerve. The operation consisted in a resection of the nerve below the gluteus maximus, which was followed by trophic disturbance in the limb. An anastomosis between the internal and external popliteals had a striking effect on the trophic disturbance. Several weeks later the external portion of the popliteal nerve was split and buried in muscle. The patient has recovered sensation and can walk with unaided locomotion.

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-First Annual Meeting, held at Memphis, April 7-9, 1914

(Concluded from page 1499)

When Should Gastric Ulcer Be Treated Surgically and When Medically?

DR. BERTRAM W. SIPPY, Chicago: According to Virchow, 37 per cent. of all carcinomas affecting the human body are located in the stomach. In text-books as long ago as ten or twenty years the statement was made that at least 10 per cent. of all carcinomas of the stomach began at the seat of an old ulcer. As many years ago as that an enthusiastic pupil of Zenker asserted that all carcinomas of the stomach developed at the seat of an ulcer. Somewhere between the two extremes the truth lies. The more we know about it, the more frequent we have the notion of carcinoma developing on an ulcer. The Mayo statistics are as high as 70 per cent. The most conservative estimate places it as high as 40 per cent. or more. Nowadays patients afflicted with stomach disorders come to us complaining that there is something wrong with them. A number of them have ulcers, but they are not recognized. The common time for the diagnosis of ulcer is after it has existed for two or two and a half years, when some surgical complication is present or carcinoma.

Our duty lies in acquiring accurate knowledge of the early symptomatology of ulcer. Ulcer of a few months' standing is one of the most comfortable things the physician is called on to treat. The patients get well rapidly. There is no place where we can do so much toward the cancer problem as by buckling to it and learning to detect the early signs of ulcer of the stomach and treat it energetically.

Brain Abscess

DR. HENRY O. REIK, Baltimore: The treatment of brain abscess is purely surgical; the abscess cavity must be disclosed, evacuated and drained. The prognosis of this disease is favorable only in those cases which are recognized early and treated promptly. Spontaneous recovery by rupture and discharge through the original channel of infection has not infrequently taken place, but cannot be anticipated.

Suprapubic Prostatectomy

DR. GEORGE R. LIVERMORE, Memphis: I prefer this route because I can perform the operation more easily and quickly than the perineal operation. It gives me a clear field. I am not afraid of injuring any important structures. I have never had any alarming hemorrhage. Drainage is satisfactory and irrigation of the bladder easily accomplished. Stones can be removed readily, and encysted ones not overlooked. The exact condition of the bladder can be noted. The two-stage operation and silver nitrate intravenously have practically elimi-

nated the danger of sepsis. There is less danger of shock, because the operation is quicker, can be done in two stages, and may be performed under local anesthesia.

The Present Status of Blood-Pressure

DR. FRANK A. JONES, Memphis: The taking of blood-pressure should be considered only as an adjuvant in the process of physical examination. The physical findings together with the symptoms and history of the case should always play the leading rôle.

The Serum Diagnosis of Gonorrheal Infection

DR. R. L. JONES and DR. IRVING SIMONS, Nashville: The blood-test for gonorrheal infection is even more accurate than the Wassermann test in lues. It is of greatest value in chronic cases. The complications of gonorrhea have given 100 per cent. of positive tests. Chronic uncomplicated gonorrhea will give a positive reaction. No non-gonorrheic has given a positive test. A negative blood-test is advisable in a candidate for matrimony who gives a history of previous gonorrheal infection, even though apparently cured.

Gall-Bladder Disease

DR. J. HUGH CARTER, Memphis: I wish to plead for a more thorough study of gall-bladder disease, and for early surgical interference, just as in appendicitis. We should not wait until the patient has been poisoned from cholemia, or has developed the condition of cardiorenal disease.

Treatment of Amebic Dysentery

DR. O. N. BRYAN, Nashville: The effect of the emetin treatment is marked from the very first. The patient notices that the stools diminish in frequency at once. The blood and mucus decrease and disappear rapidly and the stool gradually assumes its normal appearance. The patient gradually eats more and is not disturbed. He soon eats anything he wishes. His pain is relieved and he is able to sleep all night without having to rise to go to stool.

Goiter

DR. C. N. COWDEN, Nashville: Surgery of the thyroid is a most satisfactory procedure, giving at it does almost immediate relief, with very brief disability. The danger is in delay until complications develop that cannot be cured, or in faulty judgment as to when, how and the extent of the operation that is indicated. The safety of the patient is in the hands of the internist, who sees him first and advises what should be done.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

April, I, No. 10, pp. 669-750

1 Ankylostomiasis. C. M. Fauntleroy, Washington, D. C.
2 Beriberi. P. G. Woolley, Cincinnati.
3 Preventive Vaccination against Typhoid. A. Chantemesse, Paris.

Arkansas Medical Society Journal, Little Rock

April, X, No. 11, pp. 271-294

4 Bone Surgery. Case-Report. W. F. Smith, Little Rock.
5 Defective Children. E. P. Bledsoe, Little Rock.

Boston Medical and Surgical Journal

April 30, CLXX, No. 18, pp. 673-708

6 Art of Companionship in Mental Nursing. H. R. Stedman, Brookline.
7 Certain Aspects of Medical History of Exophthalmic Goiter. R. Fitz, Boston.
8 *Demonstration of Gall-Stones by Roentgen Ray. A. W. George and I. Gerber, Boston.
9 *Intracranial Hemorrhage in New-Born. Report of Cases. R. M. Green, Boston.
10 Some Present Problems in Tuberculosis. P. C. Bartlett, Rutland.
11 Tuberculous Child. C. Floyd, Boston.
12 Social Worker's Educational Influence in Community. G. B. Underwood, Gardner.
13 Field of Work of Antituberculosis Association. S. H. Stone, Boston.

8. **Gall-Stones Shown by Roentgen Ray.**—George and Gerber believe that gall-stones can be demonstrated by the Roentgen ray in nearly every case of gall-bladder disease of long standing where stones are really present. The chief sources of error are renal calculi, calcified mesenteric glands, and costochondral ossification. These can be differentiated by proper technic.

9. **Intracranial Hemorrhage in Newborn.**—Experience with seven cases leads Green to conclude that intracranial hemorrhage may occur in the newborn either from the trauma of operative or normal labor or in association with *hemorrhagica neonatorum*. It often does not present the typical clinical picture of increased intracranial pressure. Its presumptive diagnosis depends on early recognition of refusal to nurse, pallor, and slight facial edema, which may be confirmed by the appearance of more classic signs. Diagnosis may be positively established, and some therapeutic relief afforded, by lumbar puncture (when the hemorrhage is infratentorial), or by cranial puncture (when the hemorrhage is over the cerebral convexity). If these measures fail to give relief, operative decompression by craniotomy is indicated. The majority of intracranial hemorrhages in the newborn, Green claims, are subdural, but intraventricular hemorrhages may also occur. The source of bleeding may be from laceration of the tentorium, of the choroid plexus, of the longitudinal sinus or of the pial vessels. In cases associated with hemorrhagic disease preliminary transfusion may be indicated before craniotomy. The gravity of the prognosis demands an enlightened prophylaxis by avoiding all unnecessary occasion for fetal trauma.

Cleveland Medical Journal

April, XIII, No. 4, pp. 221-306

14 Report of Housing Conditions in Cleveland in 1913. M. Chadsey, Cleveland.
15 Our Primate Ancestors. T. W. Todd, Cleveland.
16 History of Physiology of Respiration. R. G. Pearce, Cleveland.
17 Postoperative Interstitial Hernia; Hypernephroma with Metastasis in Chest Wall. C. E. Briggs, Cleveland.

Journal-Lancet, Minneapolis

April 15, XXXIV, No. 8, pp. 201-229

18 Associated Lesions of Brain Tumors. A. S. Hamilton, Minneapolis.
19 Clothes-Basket and Coal-Stove Used as Baby-Incubator. F. E. Weed, Lankin, N. Dak.
20 *Surgical Shock as Factor in Obstetric Operations. A. L. McDonald, Duluth.
21 *New Device for Anastomosing Blood-Vessels. E. S. Muir, Winona.
22 Diagnosis and Conservative Treatment of Nasal Sinus Disease. E. J. Brown, Minneapolis.

20. **Surgical Shock as Factor in Obstetric Operations.**—Speaking of drugs in this condition McDonald says that ergot in some form is indicated to control uterine contraction and also helps to raise the blood-pressure by peripheral vasoconstriction. To be of any value it must be given hypodermically. Epinephrin is advised by many, and is given in doses of fifteen minims of a standard solution in 1,000 c.c. of salt solution, to be repeated, for the effect is transitory. Caffein and coffee are questioned, but the immediate effect of coffee is usually good; it is easily obtainable, and as it later causes diuresis is of value. Digitalis is doubtful, but probably too slow, even when given hypodermically. What is needed is some drug which will act promptly and specifically on the peripheral arterioles, raise the blood-pressure, and slow the heart. McDonald suggests the use of strophanthin in doses of 1 mg. intravenously. These cases must be handled intelligently from the outset, and can be satisfactorily controlled by rest, morphin, external heat, ergot, salines and hot coffee. Further stimulation and drugs that increase the irritability of the centers are a push down hill. Help nature to control the centers and support the circulation while this is being accomplished.

21. **Device for Anastomosing Blood-Vessels.**—The device used by Muir is a bone cylinder with a ring that slopes down to a very thin edge for the retention of a ligature for use in cuffing the artery back over it. These cylinders are turned out of green bone taken from the shin-bone of an ox. The surfaces, outside and inside these cylinders, must be perfectly smooth; and the size $\frac{1}{32}$ to $\frac{1}{16}$ inch smaller than

the artery in its normal condition filled with blood. The instruments to be used, besides the bone cylinder, are a device for holding the tube permanently while it is being applied without crushing; a slender spiral foreign body remover to thread the proximal end of the artery, though this may also be done by a needle and suture; four mosquito forceps; two rubber-protected hemostats or mosquito forceps; Crile forceps; sharp scissors for cutting away the cuff of adventitia.

The artery is brought to the surface by ample incision, and is clamped in each angle of the wound by the rubber-protected forceps tight enough to prevent slipping. The artery is cut across and, if desired, a portion removed. The adventitia on each cut end is pulled out with a Crile forceps, and is cut off with sharp scissors. The tube is now held in the special forceps, and the slender spiral foreign body remover is threaded through the tube, and by rotation is caused to engage the proximal end of the artery, which is drawn through the tube and caught by four mosquito forceps equidistant from each other, catching all of the coats of the artery firmly but not too deeply into the lumen. With these applied, the artery is curved back over the slanting surface of the tube beyond the ring, and is ligated with silk or fine chrome catgut. Still holding the bone tube in the forceps the distal end of the artery is caught by four mosquito forceps with the tube held parallel to it, pulled over the slanting ring of the bone cylinder and tied with silk. The success of the operation will now be demonstrated by removing the forceps when the arteries will be seen to pulsate regularly, and should not leak a single drop, as the leakage causes clotting and is the cause of many failures in anastomosis by other means. During the entire procedure the field of operation, and especially the arteries, must be kept moist with normal salt solution; otherwise the caliber will shrink to a point where it is impossible to continue the operation. The points essential to success lie in the picking of a tube considerably smaller than the artery, making anastomosis much more easy of accomplishment. The bone is absorbed in from three to four weeks. Tubes can be boiled with the other instruments or sterilized in a 5 per cent. carbolic acid solution.

Medical Record, New York

May 2, LXXXV, No. 18, pp. 783-828

23 Development of Complement-Fixation Tests. C. C. Sutter, Rochester.
24 *Intensive Treatment of Syphilis of Nervous System by Neosalvarsan Intravenously, and Mercury by Inunction. J. W. Stephenson, New York.
25 Value of Small Insurance Classes for Statistics. E. W. Dwight, New York.
26 Case of Endophlebitis Obliterans of Central Retinal Vein with Resulting Acute Glaucoma. D. Webster, New York.
27 Treatment of Pulmonary Tuberculosis by Induction of Artificial Pneumothorax. J. S. Ford, Gabriels.
28 Arteriosclerosis as Orthopedist Views It. S. Epstein, New York.
29 Simple Efficient External Metal Nasal Splint. S. E. Pendexter, East Orange, N. J.
30 Lacerated Cervix Uteri and Reflex Irritation. I. W. Ballard, Opelika, Ala.
31 Salvarsan in Non-Syphilitic Diseases: Preliminary Report. W. H. Best, Brooklyn.

24. **Treatment of Syphilis of Nervous System.**—The method adopted by Stephenson is as follows: 0.45 grains neosalvarsan is administered intravenously every third day (*i. e.*, given a Monday, repeated the following Thursday, two days intervening) for five injections. In paresis, taboparesis, and other actively severe infections, this is supplemented by inunctions of mercury (40 to 60 grains) the days the patient does not receive the injection.

Many, and in fact the majority of unfortunate sequelae of neosalvarsan administration are attributable, in Stephenson's opinion, to faulty preparation or administration of the drug. He considers 75 c.c. too concentrated a solution of 0.45 grains and invariably uses from 90 to 100 c.c. Freshly distilled water is boiled at least five minutes and then cooled to room temperature by running water. The apparatus used is the ordinary gravity one. The method of administration is as follows: 30 c.c. of lukewarm, previously sterilized, decinormal saline is introduced and as this escapes from the container the neosalvarsan solution is poured in, and as the last portion leaves the container 30 c.c. of lukewarm decinormal saline is again introduced. Especial care is taken that as small amount as possible of the neosalvarsan solution comes in contact with the warm saline, lest the warmth of the saline increase the toxicity of the drug.

Between thirty-five and forty cases have been treated after this method. Stephenson has had no alarming sequelae of the first series. Of the five patients given further injections, one, to whom the second series of injections was given at irregular intervals, died twenty-nine days after the last injection.

The immediate effect, or so-called reaction, following the series of five have been as follows: It is the usual course with tabetics that the pains are much worse from twenty-four to thirty-six hours after the first injection. After the second there may be a slight exaggeration, after the third none. In a very small number chill and slight rise of temperature have followed the first injection only. As yet there has been no case of diarrhea.

In the large majority of cases a slight conjunctival icterus has appeared after the third injection, but has been only of a few days' duration. In those cases supplemented by mercury the patient usually expresses himself as feeling "very weak" after the fourth injection, but this Stephenson attributes to the mercury, as the patients who receive no mercury never so express themselves.

One case developed a skin Herxheimer after each injection. One case developed a mild arsenic dermatitis. One case developed a herpes zoster two weeks after last injection. In paresis the mental condition is usually more pronounced following the first injection, but not so affected by subsequent ones.

New Mexico Medical Journal, Las Cruces

April, XII, No. 1, pp. 1-33

32 Study of Thyroid. S. D. Swope, Deming.
33 Duodenal Ulcers. A. W. Morton, San Francisco.
34 Sexual Hygiene. M. G. Cartwright, Albuquerque.
35 New Therapy in Variola. M. F. Des Marais, Las Vegas.
36 Treatment of Chronic Constipation. M. K. Wylder, Albuquerque.
37 Moving-Picture Shows. E. C. Prentiss, El Paso, Tex.

New York Medical Journal

April 25, XCIX, No. 17, pp. 813-860

38 Prophylaxis of Measles. J. Ruhräh, Baltimore.
39 *Value of Cocain in Disturbances of Metabolism. W. H. Porter, New York.
40 Fifteen Cases of Diabetes and Glycosuria. L. Napoleon, Philadelphia.
41 Surgeon as Autocrat of Operating-Room. J. W. Kennedy, Philadelphia.
42 Medical Testimony and Legal Supervision. P. Bartholow, New York.
43 Effects of Alcohol and Tobacco on Life Expectancy. T. D. Crothers, Hartford, Conn.
44 Army Medical Corps, H. S. Baketel, New York.
45 Psychopathology of New Dances. A. A. Brill, New York.
46 Magnetized Needle Holder. C. M. Stimson, Philadelphia.
47 Dangerous Medical Legislation. C. F. Pabst, New York.

May 2, No. 18, pp. 861-908

48 Different Theories of Aphasia. C. K. Mills, Philadelphia.
49 Clinical Interpretation of Aphasia. F. X. Dercum, Philadelphia.
50 Tuberculosis of Right Testicle Secondary to Removal of Left Testicle for Tuberculosis. V. C. Pedersen, New York.
51 Cerebrocerebellar Diplegia. L. P. Clark, New York.
52 Dermatitis Exfoliativa in an Insane Patient. R. M. Alexander, Wernersville, Pa.
53 Laryngeal Cancer. H. Smith, New York.
54 Pituitrin. Its Abuse and Dangers. A. J. Rongy and S. S. Arluck, New York.
55 New Urethroscope. G. MacGowan, Los Angeles.
56 Complete Inversion of Uterus Following Delivery. J. H. Telfair, New York.
57 Variation in Drugs. W. M. Gregory, Berea, Ohio.

39. **Cocain in Disturbances of Metabolism.**—In disease processes and in all profound disturbances of metabolism, in which the normal food products are no longer able to stimulate or excite into full physiologic activity the protoplasmic masses of the animal economy, when everything is at a standstill, as it were, or even when it is apparent to all that the patient is steadily losing ground, the addition of a half grain or more of cocain three times daily, has, in a

large number of instances under Porter's observation, during the past twenty-five years, produced almost miraculous changes for the better, and in cases that seemed almost helpless. The secretory products which before its administration gave evidence of profound metabolic disturbance within the system, under its influence changed steadily to those indicative of a more nearly normal state of the system, until the abnormal finally gave way to the perfectly normal. In all chronic affections its power for great good cannot be overestimated.

During the past ten years, Porter has employed it more and more in the acute diseases. Given early in pneumonia, and throughout the disease, the results obtained have convinced him that the chances for recovery are greater than without its administration. The same may be said of all acute diseases, for if it has this great sustaining power that all the evidence seems to prove it has, the power to resist and eliminate the toxins of disease must be greatly augmented. Having prescribed cocain extensively for nearly thirty years, Porter has yet to see a single person acquire the so-called cocain habit. He usually employs it in combination with caffein and strychnin.

Texas State Medical Journal, Fort Worth

April, IX, No. 12, pp. 363-396

58 Imperforate Anus. J. E. Hodges, Houston.
59 Cancer of the Breast. F. G. Beall, Fort Worth.
60 Caloric Requirement in Infant-Feeding. J. I. Collier, Taylor.
61 Papillomata of Larynx. H. B. Decherd, Dallas.
62 Ligation of Canaliculi in Cataract Operation with Dacryocystitis Present. G. P. Hall, Houston.

Vermont Medical Monthly, Burlington

April 15, XX, No. 4, pp. 79-104

63 Gastro-Enterostomy: Cause of Failure, Fascial Ligature of Pylorus; Account of New Method of Treating Adherent Perforating Ulcers of Posterior Wall. E. Archibald, Montreal.
64 Round of New York Children's Clinics. C. K. Johnson, Burlington.
65 Early Medicine. W. G. Ricker, St. Johnsbury.
66 Common Duct Obstruction. J. B. Deaver, Philadelphia.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 18, I, No. 2781, pp. 845-896

1 Some Diagnostic Failures. H. B. Shaw.
2 *Comparison of Inflammation and Tumor Formation. C. F. M. Saint.
3 *Three Cases of Traumatic Rupture of Small Intestine. F. Radcliffe.
4 *Rupture of Duodenum Caused by Blow. C. Maddock.
5 Condensation Obstruction in Relation to Pericolitis and Intestinal Kinking. S. Mort.
6 Fatal Case of Veronal Poisoning. E. Russell and G. Parker.
7 Veronal Poisoning: Case of Recovery from 125 Grains. J. M. H. Munro.
8 Case of Veronal Poisoning. (35 Grains.) M. I. Dick.
9 Results of Nephropexy. W. Billington.
10 Heart-Block Complicating Case of Pneumonia. R. R. M. Porter.
11 Two Cases of Diphtheria with Unusual Complications. (Pulmonary Abscess; Paralysis of Circumflex Nerve.) J. J. Jervis and V. C. Martyn.

2. **Inflammation and Tumor Formation.**—Saint dwells on the similarity of the clinical histories of inflammation and tumors, i. e., new growths, as to cause, progression and ultimate ending.

3. **Traumatic Rupture of Small Intestine.**—The three cases cited by Radcliffe have many points in common. They were all well-developed, strong men, in the prime of life; they all suffered accidents which involved being suddenly and unexpectedly dragged by their arms fully extended above their heads; none of them complained of violence applied to the abdomen or showed any external evidence of severe injury to that part. Two of them were absolutely free from the slightest abrasion or bruising on the trunk; the other had some superficial skin scratches; none showed immediate marked collapse or such symptoms as would lead one to feel certain that any severe internal injury had occurred; each had a rupture of the small intestine; in all the rupture was transverse to the long axis of the bowel; and in all the rupture was within a foot of the commencement of the jejunum; and unfortunately all of them died.

Radcliffe suggests that the mechanism of the rupture was as follows: When each was suddenly dragged by the arms, the chest would be forced into the position of full inspiration, and the diaphragm raised, as shown by indrawing of the epigastrium; therefore the upper abdominal organs (liver, stomach and spleen) would be drawn upward. The pancreas and duodenum are usually considered to be fixed, but any small movement which might take place in these organs would be in an upward direction. At the same time, as one easily finds by standing with the arms extended above the head, the lumbar spine would be markedly arched forward, and there would be very strong contraction of the anterior abdominal muscles made by the patient in the effort to recover himself. Radcliffe found by examining thin people in this position that the anterior and posterior abdominal walls actually meet. The small intestine would then be suddenly and violently forced down toward the pelvis, and it is possible that the only part of the small intestine which cannot go downward, the first part of the jejunum, is so dragged on as to rupture transversely, just as one finds that a string fixed at one end and jerked by the other, breaks near the fixed end.

4. **Rupture of Duodenum.**—In Maddock's case a wooden plank fell from the ceiling on the patient's right side while he was asleep. This occurred six weeks before Maddock saw the man. The corner of the plank hit him over the eighth rib in the midaxillary line. For three weeks he felt a dull aching pain, and then noticed a small swelling, and the pain became severe, especially on respiration; at the same time he said he had fever every day. There was no history of dysentery. The patient was desperately ill, extremely emaciated and in great pain; the evening temperature was 101.8 F. and the pulse 100; a dry cough was very troublesome. Over the center of the eighth rib was a fluctuating swelling about 2 inches in diameter; it was extremely painful on palpation. The liver dulness was diminished, reaching to 1 inch above the costal margin. The abdomen was moderately swollen and hard; it was evident that chronic peritonitis was present. The bowels moved freely, the tongue was coated.

Maddock incised the swelling in the seventh intercostal space in the midaxillary line, and at once gas and 6 ounces of pus escaped. The odor was fecal. He then introduced a finger and discovered that the eighth rib was denuded of periosteum and very rough. He could feel an abscess cavity in the right lobe of the liver, and that the liver had fallen away from the chest wall, so that he could only just reach it. Above he could feel the diaphragm, but below nothing. He put a large-sized drainage tube just through the chest wall, and applied an antiseptic dressing and bandage. Seven days later the man suddenly got out of bed and fell back onto the bed in a state of collapse, from which he never recovered. Post mortem it was found that the posterior surface of the descending portion of the duodeum had ruptured in the long axis of the bowel. The infection then spread round the chest wall, along the eighth rib, pointed, and then infected the liver, forming an abscess cavity. The lower portion of the right lobe of the liver was gangrenous. The peritoneal cavity contained serous fluid and large masses of clear gelatinous matter.

Lancet, London

April 18, I, No. 4729, pp. 1095-1162

12 Gangrene of Lung. H. B. Shaw.
13 Morphology of External Genitalia of Mammals. F. W. Jones.
14 *Intraspinous Treatment (Swift-Ellis) of General Paralysis. E. Mapother and T. Beaton.
15 Tonsils and Adenoids in Children. T. B. Layton.
16 Partial Gastrectomy for Gastric Ulcer Recurring after Gastro-Jejunostomy. J. Cunning.
17 Treatment of Duodenal Fistula. C. A. Pannett.
18 Traumatic Dislocation of Hip-Joint. H. Rischbieth.

14. **Treatment of General Paralysis.**—The four patients selected for the treatment by Mapother and Beaton were cases showing but a very slight grade of deterioration, as it

was felt that if arrest of the disease could be effected the results would be of much greater value if the process of actual destruction of the nervous elements had not proceeded very far. The following is a short summary of the history of each case and of the conditions existing at the time of commencement of treatment.

The changes observed in the conditions of the patients since the commencement of the treatment are classified under the following heads: 1. Changes in the mental state. 2. Change in the physical signs of the disease. 3. Changes in the Wassermann reaction. The changes in the mental state have not been strikingly favorable. Case 1 passed through an attack of hallucinosis, both auditory and visual, without marked clouding of consciousness, immediately following the second repetition of the treatment and lasting about fourteen days. Since then he has shown some tendency to euphoria, and though remembering his former hallucinatory periods and recognizing their subjective character he is lacking in a correct insight into their gravity. His memory, however, remains good and he is more active and interested in his surroundings. Case 2 remains practically normal. Case 3 shows the same amnesia for current events and of all those since the manifest onset of the disease with the same tendency to fabrication. In Case 4 the patient's general dulness persists unchanged, without evidence of progressive dementia. Confusional periods, such as were observed previous to the treatment, have not occurred lately.

The changes in the physical signs are as follows. In Case 1 the tremors have entirely disappeared, and the station, gait, and coordination are normal. The pupils are medium in size, equal, regular, and react almost normally in speed and extent. Some analgesia is present. In Case 2 the pupils now both react slowly to convergence and the left only to light; no other change is to be noted. In Case 3, about the beginning of February the pupils were practically normal in form and reactions, but since then have shown a tendency to return to their initial condition. There has been some diminution of tremors and some improvement in coordination. In Case 4 there was a temporary improvement in the condition of the pupils, but this has again disappeared. The tremors are gone and the tendon reflexes are a little less exaggerated. With regard to the Wassermann tests, the quantitative estimation of the Wassermann reaction in both blood and the cerebrospinal fluid showed no change whatever; in all cases the reaction in both remains as strongly positive as it was before treatment. The cerebrospinal fluid in addition was examined for the presence of globulin and excess of cells, and both those conditions were present throughout.

Practitioner, London

April, XCII, No. 4, pp. 457-600

19 On Functions of Thyroid, Suprarenal, and Pituitary Glands. J. Barr.
20 Chronic Splenic Anemia and Banti's Disease. H. D. Rolleston.
21 *Indications for Surgical Treatment in Intracranial Tumor. H. H. Tooth.
22 Ectopia of Bladder. A. Edmunds.
23 Difficulties of Diagnosis in Disease in Children. J. Porter-Parkinson.
24 Diagnosis and Treatment of Epilepsy in Childhood. E. B. Smith.
25 *Nephroptosis. K. M. Pardhy.
26 Significance of Urinary Excretion of Creatin and Creatinin. W. MacAdam.
27 Autotherapy in Prevention and Cure of Purulent Infections. C. H. Duncan.
28 Treatment of Eczema. W. K. Sibley.
29 Extraction of Diabetic Cataract. M. H. Whiting.
30 Recent Progress of Gynecology. F. J. McCann.
31 Retrospect of Otology, 1913. M. Yearsley.
32 Positive Value of Cardiac Sign in Diagnosis of Gastric Cancer. W. Gordon.
33 Schlatter's Disease. Case Report. C. Corben.

21. **Surgical Treatment in Intracranial Tumor.**—A close study of the records of 497 cases of cerebral tumor was made by Tooth to arrive at some conclusion as to the indications for surgical treatment in these cases. He states that of all new growths the endotheliomata are most favorable for radical treatment. They occur almost entirely in the anterior part of the cranial cavity, and are therefore, as a rule, accessible to operation. In spite of this there is a 46.6 per cent. mortality in the frontal region. In the central region the results are still better, with a mortality of 33.3 per cent. It would appear then that there is every justification for the radical treatment of endothelioma; the tuberculomata, though not malignant in the ordinary sense, cannot be treated surgically without grave risk of tuberculous meningitis. The sarcomata and carcinomata are comparatively few, and, if diagnosed as such, are not suitable for any operation other than the relief of pressure. Recurrence accounts mainly for the high mortality in glioma. Successful removal of a glioma undoubtedly affords relief of pressure, but recurrence practically always follows sooner or later.

The results of all surgical treatment of the extracerebellar cases are disappointing in the extreme. Attempts to remove these tumors must be abandoned for the present, until some safer modus operandi has been devised. The most that seems justifiable is to relieve pressure by free craniectomy, followed, after as long an interval as possible, by the second stage of decompression. In fact, in some cases it will be found that such relief may follow the first stage that the second may be indefinitely postponed.

The conditions which in Tooth's opinion may indicate the necessity for immediate relief, whether localization has been made or not, are referable to rise of intracranial pressure, and suggest either a rapid phase of growth of the tumor or an internal hydrocephalus. These are: (a) Increasing swelling of the optic disk, which should be measured ophthalmoscopically at very frequent intervals, say every two or three days. (b) The grosser form of optic neuritis, and particularly if there is a diminution of the visual acuity as measured by the test types. (c) Increasing drowsiness, mental dulness, slow cerebration, disorientation in time and place, and other mental states, come next in importance, even when unsupported by optic changes. (d) Respiratory distress, disturbance of respiratory and cardiac rhythm, especially in extracerebellar cases, are of prime importance. (e) Increase in the severity or frequency of convulsions, deepening paralysis, taken with advancing optic changes, indicate urgency, less so perhaps on their own merits. (f) Unbearable pain in the head may itself call for operative measures. All of these symptoms possess individual importance, but doubly so if supported by a degree of optic neuritis, and call for speedy relief.

25. **Nephroptosis.**—Pardhy discusses this subject in its relation to mental disorders and their treatment. He says that nephroptosis (movable kidney, floating kidney, dropped kidney) may cause serious vascular and ureteral obstruction and interference with the normal function of the kidney, which when often repeated causes varying degrees of dilatation of the calices or pelvis, flattening of pyramids, hydronephrosis, loss of kidney substance, and cystic degeneration. This may lead to auto-intoxication, causing, among other things, destruction or impaired function of the cerebral cells, and mental disorders. It is possible that the local effects of nephroptosis—backache, pain over the distribution of the last dorsal nerve, colitis, constipation, flatulence, etc.—contribute toward bringing on mental disorders. Nephropexy is the proper and rational procedure in cases of mental disorders, when movable kidney is present, and the only contraindications are those to be cited against any major operation. Nephropexy, to be of full benefit, must be performed properly and efficiently.

Pardhy urges that in all patients suffering from mental disorders, a thorough examination should be made to find whether the patient has movable kidney. If found to have nephroptosis, the chances of cure after nephropexy are at least 50 per cent., as a very low estimate. Even if fixing up the kidney does not cure the complaint, it cannot in any sense make the patient worse. The patient should be watched and taken care of for a prolonged period till the cure is established. The poorer class of patients should either be sent to an asylum soon after the operation, or be operated on in an asylum, so that they can be taken care of efficiently. The importance of early diagnosis of movable kidney in

cases of mental disorders, and the need of an early nephropexy, are emphasized by Pardhy. The condition of threatening or established mental disorder is so serious from the patient's and from the social point of view that as soon as the diagnosis of associated movable kidneys is made, nephropexy should be performed without delay. In consideration of the serious nature of the complaint, palliative treatment by mechanical appliance, e. g., a kidney belt or corset, should only be resorted to if a major operation is contra-indicated.

Archives des Mal. de l'Appareil Digestif, Paris

March, VIII, No. 3, pp. 121-180

34 Tumors of the Ampulla of Vater. P. Docq and L. van Bever.
35 *Examination of Duodenal Juice for Pancreatic Ferments. (Du chimisme duodénal.) E. Glatz.

35. **Chemistry of the Duodenum.**—Glatz found on ten normal persons and twenty-two with various abdominal affections that when the pancreas was functioning normally the pancreatic ferments could always be discovered in the duodenal juice.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

March, III, No. 3, pp. 257-352

36 Serodiagnosis of Pregnancy. (Des ferments protéolytiques antiplacentaires dans le sérum des femmes enceintes.) G. Ecalle, E. Partos and R. d'Ernst.

Bulletin de l'Académie de Médecine, Paris

March 31, LXXVIII, No. 13, pp. 491-522

37 *Intrabronchial Injections of Medicated Oil in Treatment of Gangrene of the Lungs. (De la méthode des injections massives intrabronchiques.) G. Guisez.

37. **Intrabronchial Injection of Drugs in Treatment of Gangrene of the Lungs.**—Guisez describes the technic with which he has injected from 20 to 25 c.c. of medicated oil directly into a bronchus, and states that his ten patients with gangrene of the lungs all recovered under this treatment. The patients had single or double gangrene, with fever and extreme prostration, and the local process rapidly healed up and the expectoration ceased. The experience of others has confirmed this almost specific action in case of gangrene, but tuberculosis is more refractory. Improvement may be realized but not a cure by this means, probably on account of the sclerous tissue that has formed which prevents the access of the medicated oil. He used among other drugs a 5 or 10 per cent. solution of guaiacol in oil.

Lyon Chirurgical, Lyons

April, XI, No. 4, pp. 314-424

38 *Irrigation of the Peritoneum with Ether. P. Santy.
39 Two Cases of Dislocation of the Articulation between the Trapezium and Metacarpal. L. Plisson.
40 The Posterior Marginal Fragment in Fracture of the Tibia. P. Japiot.
41 Visceral Anastomoses with Jaboulay's Button. M. Patel.

38. **Lavage of the Peritoneum with Ether.**—Santy undertook a series of experiments on rabbits to determine the immediate and after-effects of flushing out the peritoneum extensively with ether. He describes the histologic changes and concludes that they are too slight to constitute any danger in the use of the method, but there were immediate effects such as cyanosis, slowing of the respiration and symptoms of intoxication from absorption of the ether which led him to believe that collapse might be caused by too free use of it.

Presse Médicale, Paris

April 1, XXII, No. 26, pp. 245-252

42 *Hypophysis Extract in Gynecology. F. Jayle.

April 8, No. 28, pp. 265-272

43 *Diagnosis of Gastric Cancer by Cells Found in Stomach Content. (Le cyto-diagnostic du cancer de l'estomac.) P. Simon and L. Caussade.
44 Bacilli Found in Effusion in Knees in Case of Acute Articular Rheumatism. D. Danielopolu.

42. **Hypophysis Extract in Gynecology.**—Jayle relates ten typical cases in detail out of the fifty in which he has given a systematic course of injections of a solution of desiccated and prepared beef hypophysis (posterior lobe). The immediate results, he says, were excellent, as a rule, in various chronic afebrile gynecologic affections. The effects were most marked in young women with lesions of the ovaries, tubes or peritoneum, mild but persisting; also in cases of climacteric hemorrhage and in cases of periods of congestion in the pelvis without macroscopic lesions. It can also effectually supplement conservative operations, and may answer certain of the indications for radiotherapy and electrotherapy. The mode of action seems complex; there are signs of contraction of the vessels, but there is also evidence that the secreting function of the ovary is modified by the hypophysis extract.

43. **Diagnosis of Gastric Cancer.**—Examination of the cells found in vomit or rinsing water had seldom given reliable information until Loeper and Binet modified the technic. They take the content from the fasting stomach after a brief preliminary rinsing out of the stomach and then pouring in a liter of physiologic salt solution. This is pumped out again at once, centrifuged and examined under the microscope, with or without staining. The fluid does not all come in contact with all the walls of the stomach, as a rule, unless the patient makes an effort to accomplish this by lying down and sitting up several times in succession, with possible cautious kneading of the stomach region. Simon and Caussade give a number of illustrations to show what to look for, and state that in thirteen cases the absence of cancer cells proved the benign character of the stomach trouble, fully confirmed by the course of the cases later, while in twenty-five cases of what proved later to be cancer the findings were invariably positive with one exception, in which the technic was probably at fault. The findings with cancer were positive regardless of the type of malignant disease, and as cancer in the stomach usually ulcerates early, this cytodiagnosis may permit early differentiation.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XIX, No. 2, pp. 167-314. Last indexed Jan. 17, p. 244

45 Various Types of Homologous Reproduction in Plants and Animals. (Homologe Akte und einzelne Arten der Fortpflanzung.) F. A. Kehrer.
46 Bacteriology of the Vagina in the New Born. (Scheidenflora neugeborener Mädchen.) G. Schmidgall.
47 Occurrence of Iodin and Chlorin in Human Ovaries. B. Weinberg.
48 The Blood during Delivery and the Puerperium. (Das Blut des Weibes in der Geburt und im Wochenbett.) W. Sieben.
49 Histogenesis of Pseudomucin Ovarian Cystomas. W. Lahm.
50 Rare Deformity. (Agnathus mit Synotie.) K. Hoffmann.
51 Formation of Artificial Vagina. E. Anderes.

Beiträge zur klinischen Chirurgie, Tübingen

LXXXVIII, No. 3, pp. 423-748

52 Experimental Study of Transverse Resection of the Esophagus. H. Fründ.
53 Fate of the Testicle after Removal of Tunica Vaginalis and Albugines. Hanaoka.
54 Technic for Operations on Aneurysms. C. Stoltz.
55 Hemostasis in Operations on the Liver. (Blutstillung bei Leberoperationen.) K. Borszeky and A. Baron.
56 Roentgen Findings after Exclusion of the Pylorus. T. Barsony.
57 Experimental Pathology of Gastric Ulcer. (Magengeschwür.) A. Baron.
58 Primary Trephining for Extraction of Bullet from Brain. C. Ritter.
59 Historical, Experimental and Clinical Study of Operative Treatment of Cavities in the Lungs. (Kavernenchirurgie.) F. Kroh.
60 Technic for Closing Fistulas into Organs. (Neue Verschlussmethode für äussere Hohlorganfisteln.) H. Biesenberger.
61 Correction of Deformed Thumb. (Operatives Verfahren um den von Geburt abnorm stehenden Daumen den andern Fingern gegenüber stellbar zu machen.) H. Biesenberger.
62 Sarcoma after Trauma. K. Hartmann.
63 Typical Fracture of Atrophic Femur. M. Brandes.
64 Tuberculosis of the Stomach. (Zur Pathogenese und Therapie der Magentuberkulose.) K. Keller.
65 Pathogenesis of Fistulas in Side of Neck. (Halsfisteln.) R. Wenglowski.

LXXXIX, No. 1, pp. 1-290

66 Goiter. (Das Kropfproblem.) E. Bircher.
67 Goiter Operations. (Ueber 1,400 Strumaoperationen der Krankenanstalt Aarau.) A. Bossart.
68 *Heart Disturbances with Endemic Goiter. W. Bigler.
69 Myoma of the Gastro-Intestinal Tract. H. Hauswirth.
70 Congenital Kidney Defects or Displacement. F. Oehler.
71 Kidney Tumors; Seven Cases. E. Hofmann.
72 Acquired Giant Growth of Right Leg. W. Bigler.
73 *Outcome of Treatment of Varicose Veins by Spiral Incision; Thirty Cases. (Behandlung des varikösen Symptomenkomplexes nach Rindfleisch-Friedel.) F. Meyer.

68. **Heart Disturbances with Endemic Goiter.**—Bigler gives the details of 100 cases saying that deranged heart functioning was evident in 70 per cent. of those examined. In two cases the heart disturbances were unmistakably connected with iodin treatment. In 43 per cent. there was tremor which he regards as a manifestation of thyroid intoxication.

73. **Spiral Incision for Varicose Veins.**—Meyer states that recent reexamination showed that only 41.66 per cent. of the eighteen patients with leg ulcers were permanently cured by the spiral incision. But all were promptly and permanently cured in the twenty-four cases in which this operation was done for varicose veins alone. With leg ulcer the lesion and varicose enlargement extend too deep into the tissues to be controlled by the superficial spiral incision.

Berliner klinische Wochenschrift

April 13, LI, No. 15, pp. 677-724

74 *Treatment of Syphilitic Nervous Disease. H. Oppenheim.
75 Fascia and Peritoneum Implant in Treatment of Rectal Prolapse. (Verwendung von frei transplantierten Fascien- und Peritonealstreifen in der Behandlung des Mastdarmvorfalles.) H. Harttung.
76 Operative Treatment of Tuberculous Spondylitis. (Operative Behandlung der tuberkulösen Entzündung der Wirbelsäule.) O. Vulpius.
77 Management of Duodenum Stump after Resection of the Stomach. (Zur Frage der Gefährdung des Duodenalstumpfes bei der Magenresektion Billroth II.) E. Melchior and S. Weil.
78 *Typhoid Bacilli in Blood of Healthy Carrier. E. Ebeling.
79 Modified Technic for Wassermann Reaction. (Erfahrungen mit dem Sachs'schen Cholesterinalkoholextrakt und dem Lesser'schen Aetherextrakt bei der Wassermann'schen Reaktion.) G. Orkin.
80 Electrodes for Electrotherapy. (Neue Elektroden für die gefahrlose Anwendung starker, bes. diathermischer Ströme in der Gynäkologie.) M. Amtschislawsky.
81 The Fibers of the Epithelium. (Zur Chemie der Zelle. VI.) P. G. Unna.
82 *Implants of Periosteum and Bone for Correction of Traumatic Deformities. (Periost- und Knochenüberpflanzungen; Vorschlag zur Heilung des Plattknickfusses.) M. Katzenstein.

74. **Treatment of Syphilitic Nervous Affections.**—Oppenheim reports that only 8 patients out of 20 with cerebral syphilis were favorably influenced by salvarsan treatment. In 3 others the condition became aggravated under it. Benefit was manifest also in 6 of 15 with spinal syphilis; in 2 the symptoms grew worse, and no effect was evident in the others. Of the 50 tabetics treated, only 10 showed any benefit; in 11 cases the symptoms rapidly progressed; in 2 of this group atrophy of the optic nerve developed, of which there had been no signs before. In 29 no influence from the salvarsan could be detected or if one symptom improved, others grew worse. The outcome was still less favorable in general paresis; 15 of the 24 in this group showed no effect from the treatment; 6 found their symptoms rapidly growing worse and only 2, or at most 3, showed a remission of their symptoms. No benefit was derived in 2 cases of paralysis agitans, epilepsy, chronic anterior poliomyelitis, and in one case of progressive muscular atrophy. His 2 cases of severe encephalitis following the salvarsan have already been published. One was particularly tragic as a young and talented actress wanted the salvarsan merely as a precautionary measure as she had had intercourse with an infected man. She had no symptoms herself, but after salvarsan she developed complete paraplegia, paralysis of bladder and rectum, decubitus, and optic nerve trouble. He has had no mishaps of this kind in the last year, and none ever terminated fatally.

78. **Typhoid Bacilli in Blood of Carrier.**—Fourteen primary and eighteen secondary cases of typhoid fever, with six deaths, were traced to this healthy carrier, but she had always cheated in sending dejecta for examination so that it was impossible to prove her a dangerous carrier. Finally her blood was examined, and typhoid bacilli were found in it.

82. **Periosteum-Grafting to Remedy Pain or Deformities.**—Katzenstein declares that bone and periosteum grafting operations are becoming routine procedures and restoring many cripples to active life. The method he applied in one case has a future, he thinks. It held the parts as firmly in place as if they had been nailed, but the support was with living engrafted tissue. Nothing but periosteum will display such a vital growth when implanted. He utilized this with a strip folded lengthwise, turning the proliferating side inward, leaving it exposed only at the ends. These ends are sutured to the bone to ensure intimate contact while there is no further contact anywhere with the osteogenetic surface of the strip.

In the case described a young woman had torn the internal lateral ligament, the consequence being a very painful chronic subdislocation of the foot on the tibia. The calcaneoscaphoid joint was abnormally movable, and every step was extremely painful. The pain sometimes waked her at night, but by wiggling her foot the bones seemed to spring back into place and stop the pain. Katzenstein folded a strip of periosteum as described above and implanted it to make a new ligament, suturing the strip to freshened areas on the malleolus and scaphoid bone, turning in the bone-generating surface except at the ends. The foot was then immobilized in a varus position for seven weeks, after which it seemed to be normal in every respect and the patient has even done mountain climbing without a trace of disturbance on the part of the foot during the nearly three years to date. He has applied the same technic in three cases of severe flat-foot and all functional disturbance was corrected at once. The patients do not even have to wear insoles.

Periosteum-grafting to remedy pain or deformities: 1, periosteum flap folded lengthwise; 2 and 3, osteogenetic layer; 4, new-formed ligament connecting tibia and scaphoid bone.

The same result with flat-foot can sometimes be realized in an easier way by toughening the ligaments so that they no longer stretch to an abnormal extent. He accomplishes this by injecting 1 or 2 c.c. of 4 per cent. formaldehyd directly into the lateral ligament. This tightens up the ligament so much that in one case considerable massage was necessary to restore even normal elasticity. In two cases of extremely painful flat-foot rebellious for months to all measures, this tanning procedure cured at once, and there has been no return of trouble during the two years since. Insoles must be discarded. This method can be applied to all such cases, but it promises success only in the early stages, when the lax stretching of the ligament is what is causing the trouble. Katzenstein gives further an illustrated description of eight cases of deformity of bone in which he implanted an autograft of bone, and always with fine effect. He does not aim to supply a complete substitute for the missing bone, as the small piece of bone plus periosteum engrafted will develop to fit the place in response to the functional demands made on it.

Deutsches Archiv für klinische Medizin, Leipsic

CXIV, Nos. 1-2, pp. 1-208. Last indexed April 4, p. 1127

83 Alternating and Pseudo-Alternating Pulse. H. v. Hoesslin.
84 Functional Testing of Diseased Kidneys. B. Griessman.
85 Testing Kidney Function with Phenolsulphonephthalein and by Schlayer's Method. F. Deutsch and W. Schmuckler.
86 Examining the Activity of the Kidneys by Means of a Test Meal. M. H. Hedinger and Schlayer.
87 Excretion of Sodium Chlorid in Heart Disease. Barantschik.

Deutsche medizinische Wochenschrift, Berlin

April 9, XL, No. 15, pp. 737-784

88 Treatment of Acute Threatening Conditions in Tropical Diseases. (Akut bedrohlicher Zustände bei Tropenkrankheiten.) P. Mühlens.
89 Simple and Rapid Method for Quantitative Estimation of Uric Acid in Blood; Only 0.1 c.c. Serum Required. (Quantitative Schätzung der Harnsäure im Blute.) T. Brugsch and L. Kristeller.
90 Specific Nature of Protective Ferments in Serodiagnosis. (Verhalten des Blutserums Gesunder und Kranker gegenüber Plazentaeiweiss.) A. E. Lampé and R. Fuchs.

91 *Reducing the Size of the Carotid Arteries in Epilepsy. (Vergengerung der Karotiden bei Epilepsie.) Momburg.
92 *Familial Syphilis and Keratitis. F. Lesser and P. Carsten.
93 No Benefit from Vaccine Therapy for Gonorrhea in Children. R. Hamburger.
94 Test for Coagulating Time of the Blood. (Einfache Methode zur Bestimmung der Gerinnungszeit des Blutes.) L. Loewenthal.
95 Malaria in Southeastern Germany. Malisch.

91. **Compression of Carotid Arteries to Arrest Epileptic Seizure.**—Momburg was led to try this measure from observation of the influence on the brain of ligation of the carotids. With thumb and finger he compressed both these arteries when a man fell in an epileptic seizure. The effect was striking, the convulsive movements ceased, a deep respiration followed, and the man opened his eyes, apparently conscious. Four men then took up the epileptic to carry him into a house but at once the symptoms reappeared, so Momburg applied compression anew to the carotids with both thumbs. Again the convulsive movements ceased, the man drew a deep breath, opened his eyes and responded to questions. Compression of the carotids for this purpose was first advocated by Reimer about 1855; Corning applied it later, and Volland at Momburg's instigation has applied it repeatedly to arrest seizures among the epileptics in his charge.

The assumption seems justified that the peculiar excitability of the brain responsible for the seizure can be reduced by diminishing the supply of blood to the brain. The next step is to seek permanent relief by definitely shutting off part of the blood supply, and Momburg accomplished this in two cases by tying a wire around one artery only just tight enough to partially obstruct the flow of blood through it, with a temporary silk thread for the other artery. Neither of the patients has had headache since and one had two brief seizures a week later but none since. The other had been having a seizure every two or three weeks for six years, but has had none since this operation a month ago. He adds that there is nothing to suggest any untoward byeffects from the procedure in any way. Collaterals will scarcely develop so long as the blood-supply is sufficient for the nourishment of the cells.

92. **Familial Syphilis in Connection with Keratitis.**—Lesser and Carsten give the family records in thirty-five cases of parenchymatous keratitis. They show that it is exclusively of syphilitic nature; tuberculosis does not even favor its development. The records further show that twice as many of the offspring develop signs of the inherited taint later as would be surmised from the findings during the first few years after birth. Mothers with a positive Wassermann are liable to bear syphilitic children even from six to twelve years after infection. The positive Wassermann of the fathers seems to be less baleful for the offspring.

Deutsche Zeitschrift für Chirurgie, Leipsic

CXXVII, Nos. 5-6, pp. 415-642

96 *Acute Progressive Encephalitis and Meningitis. Borchard.
97 Traumatic Aneurysms in the Balkan Wars. V. Subbotitch.
98 Foreign Bodies in the Duodenum. E. Melchior.
99 Ileus from Abnormal Fold in the Peritoneum. (Plica diaphragmatica ovarii als Ursache einer Darminkarzeration.) H. Andree.
100 Frost Gangrene. (Echte Erfrierungsgangränen im bulgarisch-türkischen Krieg.) A. W. Meyer and R. Kohlschütter.
101 *Alkaline Treatment of Septic Processes. Vorschütz.
102 Direct Transfusion of Blood. R. Göbell and A. Poggemann.
103 Volvulus of the Stomach. T. Kocher.
104 Successful Suture of Gunshot Wounds of the Heart. (Geheilter Fall von Schussverletzung des rechten Ventrikels.) Vorschütz.

96. **Acute Encephalitis.**—Borchard here discusses the three clinical types, acute progressive encephalitis, acute circumscribed meningitis and meningo-encephalitis, showing how all present the same clinical picture of progressive focal symptoms suggesting the necessity for operative intervention and liable to respond favorably to it. Even without infection, traumatic encephalitis seems to display a progressive tendency. The focal symptoms do not develop so suddenly as with a destructive injury of the brain or a traumatic hemorrhage; they are seldom manifest before the second day; there may be merely signs of irritation up to actual paralysis. There is generally a pronounced progressive course, but it may stop suddenly and retrogress entirely, with or without treatment, even when infection is installed. The progressive course does not necessarily indicate infection. Symptoms of cortical epilepsy have been noted in some cases, but the motions were not so rapid as in epilepsy and half of them occurred still slower. In a case reported in detail two epileptic convulsions preceded by twelve hours the actual focal symptoms. The regularly increasing intensity of the focal symptoms is the characteristic feature of these cases, in connection with a history of trauma, infection or intoxication. There is generally a hint, at least, of rigidity of the back of the neck. Vertical nystagmus is a sign that the inflammation has extended inward and the prognosis becomes bad at once. Normal temperature is no sign that infection is not already at work. No tissue in the body is so sensitive as the brain to disturbances in circulation, and prompt trephining and draining provide conditions which permit the parts to heal. In the case reported the patient promptly recovered, as also in a second case in a syphilitic. The dura not only has to be slit, but the intrameningeal spaces must be drained and adhesions broken up. This permits the dura to cling close so no space is left for fluid to collect further.

101. **Alkaline Treatment of Septic Processes.**—Vorschütz says that administration of an alkali whips up the cells, causes an edematous loosening up of the tissues, augments the secretion of urine by its action on the kidneys, raises the blood-pressure, and increases the appetite. The cell is whipped up in its work of metabolism and of elaboration of antitoxins; consequently the alkali does no good unless the cell is capable of responding. He gives the details of nine cases and considerable experimentation on animals to demonstrate its action and also to prove that a deficiency of alkali is responsible for defective production of antibodies. By this means he is convinced that he has tided certain patients past the danger stage who would have been lost without it. He mixed 10 or 20 gm. of sodium bicarbonate in a bottle of seltzer water and had the patient drink this during the day. Children took half this amount. Some of the patients took this for weeks without disturbances; a healthy stomach rebels at these large doses of an alkali. Sometimes pain in the stomach compelled suspension for a day or so, but diarrhea was regarded as useful unless too profuse. The alkali can be given by proctoclysis or by intravenous infusion. The cases reported were severe septic processes, osteomyelitis, scarlatinal nephritis with abscess, etc., and all recovered.

Jahrbuch für Kinderheilkunde, Berlin

April, LXXIX, No. 4, pp. 385-506

105 Experimental Study of the Effects of Thymus Extract. R. Fischl. (To be continued.)
106 There Seems to Be a Family Predisposition to Scarlatinal Nephritis. P. Bode.
107 Connection between Rachitis and Spasmophilia. E. Aschenheim.

Medizinische Klinik, Berlin

April 5, X, No. 14, pp. 573-620

108 *Metabolism in Rachitis. (Stoffwechselprobleme der Rachitis.) P. Grosser.
109 Treatment of Trigeminal Neuralgia by Destruction of Gasserian Ganglion by Intracranial Injections. F. Härtel.
110 Salvarsanized Serum. (Experimentelle und klinische Untersuchungen mit Salvarsan-Serumlösungen.) B. Spiethoff.
111 *Roentgenotherapy of Myoma. (Myomherz und Tiefentherapie.) J. Mahler.
112 The Scientific Basis for Balneotherapy. (Balneotherapie; physiologische Voraussetzungen; klinische Anwendungsformen.) Landouzy and J. Heitz. Commenced in 13.
113 Technic and Indications for Obstetric Forceps. F. Heimann.

April 12, No. 15, pp. 621-664

114 Bladder Tumors. (Harnblasengeschwülste.) L. Casper.
115 *Summation and Enhancing of Potency of Drugs by Combining Them. (Wirkung der Arzneigemische.) E. Bürgi. Commenced in No. 14.
116 *Asthenic Infantilism. (Der asthenische Infantilismus des weiblichen Geschlechts und seine Bedeutung für die ärztliche Praxis.) H. Albrecht.
117 *Artificial Sterilization of Women. A. Sarkissiantz.
118 Periodical Recurrence of Migraine. (Migräne als Rekreationsphänomen und ihr prädilektives Auftreten an bestimmten Tagen der Woche.) R. Traugott.

119 *Hemorrhoids Result of Stagnation of Feces in Rectum. (Aetiologie und Behandlung der Hämorrhoidalblutungen.) L. v. Aldor.
120 Football Paralysis, and Allied Conditions. (Physiologische und pathologische Bewegungsfragen.) M. Benedikt.

108. **Metabolism in Rachitis.**—Grosser's long article shows how little we really know in regard to the nature of rachitis, and the difficulties connected with research in this line. He reports extensive work of his own. One practical outcome of it is that besides the specific beneficial action of phosphorus plus cod liver oil, a similar beneficial action is apparent from subcutaneous injection of calcium glycerophosphate. Both this and the phosphorus-cod liver oil seem to exert a specific action on the lime metabolism in rachitis. None of the other drugs or combinations tested displayed this action to any degree.

111. **Myoma Heart.**—Mahler concludes from his analysis of his experience that uterine myomas are accompanied at first by merely functional disturbances on the part of the heart, but hypertrophy and dilatation of the heart soon follow. The heart disturbances resemble in many points those with exophthalmic goiter. It seems probable that the altered ovarian secretion has a directly injurious action on the heart, plus an indirect action from the upset balance in the ductless-gland system. Exposure of the ovaries to the Roentgen rays checks their perverted function and gives the cardiovascular system a chance to recuperate. He has treated fifteen myoma patients in this way, and regards the results as very satisfactory; the heart subsided more or less completely to normal size and functioning. He also reports excellent results in various other gynecologic cases.

115. **Modification of Action of Drugs by Combining Them.**—Bürgi has continued his research in this line since his earlier communication summarized in THE JOURNAL, 1911, lvi, 1862. He draws a sharp distinction between mere summation of the effects of combined drugs and enhancing of the potency of each by their combination. It seems to be a law, he says, that combining drugs of the same series which have the same pharmacologic point of attack, merely adds by summation of their individual actions. On the other hand, drugs of the same series but which have separate pharmacologic points of attack sometimes seem to have the potency of each enhanced when they are combined in certain proportions. He mentions as an example of this that belladonna preparations have no narcotic action alone; if the dose is large enough to induce anesthesia, other symptoms are produced which prevent a narcotic influence. But if a small amount of some belladonna preparation is mixed with one of the ordinary narcotics, the action of the latter is materially enhanced. He calls attention also to the curious fact that the combination of two drugs, each in half the dose found to be the limit dose for general anesthesia, showed that the potency of each was somewhat weakened by the combination, but then, if the dose of each was reduced still smaller, the potency of the mixture increased, and this was manifest down to extremely small doses. These experiences show, he reiterates, that with the actual limit dose we have to reckon with a reversal of the action of the drug. He found that the various organ extracts acted on the heart each in a different way, each influencing a different segment of the heart, so that there can be no question of summation or enhancing the potency by combining organ extracts.

116. **Asthenic Infantilism.**—Albrecht applies this term to describe a constitutional anomaly consisting in the persistence of infantile and juvenile forms of growth accompanied by a functional weakness and special readiness of the organs involved to yield to disease. The infantilism is the morphologic and the asthenia the functional manifestation of constitutional inferiority. But the infantile and asthenic phenomena on the part of the nervous system and the mind are what dominate the clinical picture, as a rule, especially the neurasthenia, the psychasthenia and the extreme sensibility of the sympathetic system. He says that women of this type form the majority of our patients—1,000 of the 6,018 gynecologic patients in his service, and fully 32 per cent. of the women that came to the dispensary. It is these women of this asthenic infantile type that go from doctor to doctor, from one specialist to another, from internists to surgeons—each applying some different treatment but all failing to cure.

The main point in these cases is to bear in mind that large numbers of these patients find that under conservative measures and psychotherapy all their disturbances disappear, for a long time at least, without any local treatment and without any change in the objective findings. The special characteristic of the cases is that periods of complete clinical health alternate abruptly with periods of severe disturbances—the objective findings unmodified throughout.

117. **Artificial Sterilization of Women.**—This communication advocates severing the tubes between two ligatures, working through an incision in the roof of the anterior vagina. This is done at the same sitting as the evacuation of the uterus, when the pregnancy has not passed beyond four and a half months, and vaginofixation concludes the whole.

119. **Hemorrhoidal Hemorrhages.**—Aldor presents theoretical and clinical evidence to prove that hemorrhoids are as a rule not a local affection of the veins in the region, but are the result of a hemorrhagic chronic or repeatedly recurring inflammation of the rectum, and that this proctitis is the direct result of constipation restricted to the rectum. This part of the bowel has had its sensibility deadened so that residual feces stagnate there and set up inflammation even when the bowel functioning is supposed to be normal. Evacuation of the rectum and local treatment of the proctitis will cure the hemorrhoids, along with the proctitis. But constant vigilance is necessary and a diet as free from residue as possible—the reverse of the diet for ordinary constipation.

Münchener medizinische Wochenschrift

April 7, LI, No. 14, pp. 745-800

121 *Salvarsanized Serum. (Salvarsanserum.) A. Stühmer.
122 *Salvarsanized Serum in Syphilis of the Nervous System. (Zur Behandlung der Syphilis des Zentralnervensystems nach Swift und Ellis.) K. Eskuchen.
123 *Importance for Diagnosis and Prognosis of Repeated Local Tuberculin Reactions. Pringsheim.
124 Silicic Acid Metabolism in Cancer and Tuberculosis. (Kieselsäurestoffwechsel bei Krebs und Tuberkulose und seine Bedeutung für die Therapie der Tuberkulose.) H. Kahle. (Zur Siliziumbehandlung der Tuberkulose.) R. Rössle.
125 Bolus Alba in Treatment of Cholera. (Ueber Cholerabehandlung und Choleraprophylaxe auf Grund meiner Erfahrungen in Nisch und Belgrad.) J. Stumpf.
126 Roentgenography of the Liver and Spleen. (Leber und Milz im Röntgenbild.) C. Löffler.
127 *Serodiagnosis of Pregnancy. (Weitere Untersuchungen über das Auftreten blutfremder proteolytischer Fermente im Blute Schwangerer. Untersuchung des Dialysates mittels Ninhydrin und gleichzeitiger Feststellung seines Stickstoffgehaltes mittels Mikroanalyse.) E. Abderhalden and A. Fodor. (Biologische Prüfung der Ergebnisse des Dialysierverfahrens.) E. Abderhalden and L. Grigorescu. (Verwertbarkeit der Abderhaldenschen Reaktion in der Diagnose der Schwangerschaft.) E. Schiff.
128 Treatment of Furunculosis in Infants with Actual Cautery. (Behandlung der Furunkulose im Säuglingsalter mittels Thermokauter.) M. E. Schübert.
129 *Diagnosis of Cerebral Hemorrhage. (Hirnblutung.) J. Mendl.

121. **Salvarsanized Serum.**—Stühmer has been studying on rabbits how long the therapeutically active substances in salvarsan can be demonstrated in the serum after intravenous injection, and whether these substances are from the drug or are antibodies generated in consequence of its presence. He took nagana for the disease to be investigated, as syphilis in rabbits is irregular. He found that as late as seven days after the injection active substances could be demonstrated in the serum, both by chemical and biologic tests, the latter showing the presence of protecting and curing substances in respect to mice inoculated with the same trypanosomes. The facts observed show that it can not be a question of relics of the salvarsan alone; the products of its oxidation evidently participate. He says that this research was suggested by Swift and Ellis' work.

122. **Salvarsanized Serum.**—Eskuchen applied Swift and Ellis' technic in nine cases of tabes, two of cerebrospinal

syphilis and five of general paralysis, a total of sixty-eight injections. The objective findings did not seem to be modified, but the subjective symptoms were promptly and materially improved and the course of the disease seemed to be arrested.

123. **Repeated Local Tuberculin Reactions as Index to Diagnosis and Prognosis.**—Pringsheim has been conducting on 125 adults a series of experiments like those Bessau and Schwenke have been conducting on large numbers of children, testing repeatedly the local reaction to intradermal injection of tuberculin in three strengths (1:100; 1:1,000 and 1:10,000). In each case 0.1 c.c. of the weakest solution was injected in the thigh and a week later a similar injection was made in the other thigh. If both tests were negative, the procedure was repeated with the medium strength, and if this was negative, the strongest solution was then used. The size of the papule and area were measured and the redness and hardness noted each twenty-four hours for eight days. Pringsheim's patients were men between 20 and 60 in the city hospital for various troubles, and only one of the entire 125 failed to give a positive reaction. The findings with these tests confirm the importance of the procedure as a guide not only to diagnosis but for the prognosis. A marked local reaction shows that the tuberculosis is being vigorously combated in the organism, while a negative is a sign that the affection is slight and healing or else that the organism has given up the struggle and the tuberculosis has got the upper hand. Every one of the men showing increased local reaction has improved materially since these tests were applied, while of those showing no increase in the reaction 7.7 per cent. have died; in 7.8 per cent. the tuberculosis is stationary and only 59.1 per cent. show any signs of improvement.

127. **Serodiagnosis of Pregnancy.**—Abderhalden and Fodor here announce that besides the optic and ninhydrin dialysis methods for determination of the protective proteolytic ferments in the blood of pregnant women, they have worked out a third method by determination of the nitrogen in the dialysate. Their tables show concordant findings with these various technics. The ferments can be demonstrated also by the refractometer, the ultramicroscope, polarization, etc., and by stains.

129. **Diagnosis of Cerebral Hemorrhage.**—Mendl has noticed that there were marked hyperemia and a tendency to congestive seborrhea on the side of the face and scalp corresponding to the developing hemorrhage in the brain. The hair on that side also stands up, and it is impossible to make it lie smooth. The hyperemia in one side of the face may yield to pallor and a distressed expression, and there may be sensations of oppression in the heart region. These findings may persist for hours before there are other signs of the hemorrhage in the brain. The spastic contraction of the muscles causing the hair to "stand up on end" is a grave sign; he found it only in the cases which had an unfavorable outcome. It sometimes preceded the cerebral hemorrhage by several hours. It is possible, he suggests, that prompt and copious venesection might ward off the cerebral hemorrhage when this spastic contracture of the muscles involved shows the influence of substances from the crushed brain tissue which have entered the blood.

Wiener klinische Wochenschrift, Vienna

April 9, XXVII, No. 15, pp. 405-452

130 Ultimate Outcome of Operative Treatment of Mammary Cancer. (Operative Therapie des Brustdrüsenkrebses und deren Dauererfolge.) V. Lazarevic.
131 Means to Ensure Continence after Operations for Rectal Cancer. K. Goldschmied.
132 Influence of Menstruation on Sugar Content of the Blood. H. Kahler.
133 Radium Treatment of Uterine Cancer. R. Köhler and O. Schindler.
134 Case of Periodical Swelling of the Joints. (Hydrops articulorum intermittens.) A. Pulawski.
135 Roentgen Exposures of the Ovaries and Exophthalmic Goiter: Necessity for Discrimination as to Functioning of Different Ductless Glands. K. Wagner.

Zeitschrift für Urologie, Berlin

April, VIII, No. 4, pp. 241-352

136 Closed Pyonephrosis. (Geschlossene Pyonephrosen.) R. Lichtenstern.
137 Hematuria after Large Doses of Hexamethylenamin: Four Cases. (Hämaturien nach grossen Urotropingaben.) L. Simon.
138 Importance of Pancreas Disease for Surgery of the Urinary Passages. E. R. W. Frank.

Zentralblatt für Chirurgie, Leipsic

April 11, XLI, No. 15, pp. 625-672

139 *Transplanted Muscles with Nerves. (Hyperneurotisation; muskuläre Neurotisation; freie Muskeltransplantation.) P. Erlacher.
140 Enlarged Lymph-Nodes in the Axilla as Sign of Apical Process. (Axillare Lymphknoten und Lungentuberkulose.) Wieting.
141 Atropin as Aid in Operations on the Chest. A. Grave.
142 Device for Slow Aspiration of Effusions. (Einfache und sparsam arbeitende Vorrichtung zum Absaugen von Körperflüssigkeiten.) W. Hartert.

139. **Transplanting Nerves with Muscles.**—The experiments on animals reported showed that skilfully placed nerve fibers regenerated and grew as well as the muscle fibers in the implants.

Zentralblatt für Gynäkologie, Leipsic

April 11, XXXVIII, No. 15, pp. 545-584

143 Severe Hemorrhage from Atony of the Uterus Developing Five Hours after Expulsion of Placenta Preceded by Injection of Hypophysis Extract. (Hypophysenextrakt und Atonia uteri.) C. W. Bischoff.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 40-41, pp. 417-440

144 The Albumin Reaction in the Sputum of Not Much Diagnostic Import. (L'albumino-reazione.) A. Fantoni.
145 Symptoms of Tumors in the Cerebellum. Greggio.
146 Movable Area of Dulness with Non-Adherent Ovarian Cysts Simulating Tuberculous Peritonitis. P. Azara.

Riforma Medica, Naples

April 4, XXX, No. 14, pp. 365-392

147 Glycosuria Follows Injection in Rabbits of Extract of the Celiac Plexus. (La glicosuria celiaca.) F. Galdi.
148 Reaction of the Blood Marrow to Injection in Animals of Thyroid and Hypophysis Extract and Epinephrin. G. Ollino. Commenced in No. 13.
149 Manifestations of Malaria in the Skin. (Manifestazioni cutanee della malaria, con particolare riguardo a una forma di ectima.) L. Chimisso. Commenced in No. 13.

Brazil-Medico, Rio de Janeiro

March 22, XXVIII, No. 12, pp. 113-122

150 Non-Identity of Ceylon and Brazil Anchylostoma. (Ainda sobre "anchylostoma braziliense"—Gomes de Faria, 1910.) G. de Faria.
151 Pediatrics and Infant Welfare Work. (Hygiene infantil.) L. Barbosa. Commenced in No. 11.

Pediatria, St. Petersburg

VI, No. 1, pp. 1-80. Last indexed March 21, p. 976

152 *Relations between Orthostatic Albuminuria and Tuberculosis. P. Reyher.
153 Prophylaxis of Diphtheria. I. Bomshtein.
154 Results of Schloss' Mixture for Children in Dispensary Practice. M. S. Katznelson.

No. 2, pp. 81-160

155 Defective Growth of Bones. (Osteogenesis imperfecta.) I. A. Schabad.
156 Streptococcus Sepsis in Scarlet Fever; Recovery. O. I. Moltchanoff.

152. **Connection Between Orthostatic Albuminuria and Tuberculosis.**—Reyher gives the details of twenty cases of orthostatic albuminuria in which continued supervision over the children revealed underlying tuberculosis in every case.

Hygiea, Stockholm

LXXVI, No. 6, pp. 321-384

157 *Case of Acute Hemorrhagic Encephalitis in the Pons with Fatal Hemorrhage. S. Berg.
158 The Cutaneous Thermic Sense. (Histofysiologiska Studier över temperatursinnena i huden hos människan.) G. Häggqvist.

157. **Acute Hemorrhagic Encephalitis.**—A young woman hit her head in falling on the ice and for five years thereafter had attacks of severe headache about once a year. She was otherwise healthy until she developed signs of acute encephalitis and died the third day in coma. Necropsy showed multiple hemorrhages in the pons but no bacteria could be found and nothing pathologic was found elsewhere.

THE ATLANTIC CITY SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-FIFTH ANNUAL SESSION, ATLANTIC CITY, N. J., JUNE 22-26, 1914

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-fifth annual session of the American Medical Association will be held at Atlantic City, N. J., June 22-26, 1914.

The House of Delegates will convene at 10 a. m., Monday, June 22. In the House the representation of the various constituent associations for 1914 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	3	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	1
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 10:30 a. m., Tuesday, June 23. The various sections will meet Tuesday at 2 p. m., and subsequently, according to their programs, on Wednesday and Thursday, June 24 and 25, and in some cases also on Friday morning, June 26.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 22, 23, 24 and 25, and from 9 to 10 a. m., on Friday, June 26.

JOHN A. WITHERSPOON, President.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
E. D. Bondurant, Mobile.
H. T. Inge, Mobile.

ARIZONA
John E. Bacon, Miami.

ARKANSAS
William V. Laws, Hot Springs.

CALIFORNIA
George Hare, Fresno.
V. G. Vecki, San Francisco.
H. Bert Ellis, Los Angeles.

COLORADO
W. A. Jayne, Denver.
L. H. McKinnie, Colorado Springs.

CONNECTICUT
D. Chester Brown, Danbury.
E. J. McKnight, Hartford.

DELAWARE
Henry J. Stubbs, Wilmington.

DISTRICT OF COLMBIA
G. Wythe Cook, Washington.

GEORGIA
M. A. Clark, Macon.

IDAHO
John N. Alley, Lapwai.

ILLINOIS
A. M. Harvey, Chicago.
A. M. Corwin, Chicago.
J. A. Koch, Quincy.

INDIANA
F. B. Wynn, Indianapolis.
C. S. Bond, Richmond.
J. Rilus Eastman, Indianapolis.
Edwin Walker, Evansville.

IOWA
J. C. Rockafellow, Des Moines.

CANAL ZONE
T. W. Earhart, Ancon.

KANSAS
George M. Gray, Kansas City.

KENTUCKY
J. W. Kincaid, Catlettsburg.
A. T. McCormack, Bowling Green.

MARYLAND
Hugh H. Young, Baltimore.

MASSACHUSETTS
Hugh Cabot, Boston.
C. P. Hooker, Springfield.
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.

MICHIGAN
C. E. Boys, Kalamazoo.
F. C. Warnshuis, Grand Rapids.
L. J. Hirschman, Detroit.
E. T. Abrams, Dollar Bay.

MINNESOTA
W. L. Palmer, Albert Lea.
J. W. Andrews, Mankato.

MISSISSIPPI
S. W. Glass, Lyon.
L. C. Feemster, Tupelo.

MISSOURI
Robert M. Funkhouser, St. Louis.
E. J. Goodwin, St. Louis.

MONTANA
Le Roy Southmayd, Great Falls.

NEBRASKA
A. R. Mitchell, Lincoln.

NEVADA
B. F. Cunningham, Reno.

NEW JERSEY
W. S. Lalor, Trenton.
Linn Emerson, Orange.
Edward Guion, Atlantic City.

NEW MEXICO
William R. Tipton, E. Las Vegas.

NEW YORK
Henry L. Elsner, Syracuse.
Floyd M. Crandall, New York.
Edgar A. Vander Veer, Albany.
Wesley T. Mulligan, Rochester.
John C. Polak, Brooklyn.
S. W. S. Toms, Nyack.

NORTH CAROLINA
J. Howell Way, Waynesville.
H. A. Royster, Raleigh.

NORTH DAKOTA
James Grassick, Grand Forks.

OKLAHOMA
J. H. White, Muskogee.

OREGON
Walter T. Williamson, Portland.

PENNSYLVANIA
Thomas D. Davis, Pittsburgh.
William T. Hamilton, Philadelphia.
John B. McAlister, Harrisburg.
W. Rowland Davies, Scranton.
Americus R. Allen, Carlisle.
J. Montgomery Baldy, Philadelphia.
Herbert B. Gibby, Wilkes-Barre.
Luther B. Kline, Catawissa.
Adolph Koenig, Pittsburgh.

RHODE ISLAND
John W. Keefe, Providence.

SOUTH CAROLINA
Edgar A. Hines, Seneca.

TEXAS
Holman Taylor, Ft. Worth.
C. A. Smith, Texarkana.
Clay Johnson, Ft. Worth.

UTAH
Sol G. Kahn, Salt Lake City.

VERMONT
C. H. Beecher, Burlington.

VIRGINIA
J. Shelton Horsley, Richmond.

WASHINGTON
L. L. Love, Tacoma.

WISCONSIN
J. J. McGovern, Milwaukee.
Rock Sleyster, Waupun.

WYOMING
M. A. Newell, Sheridan.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Ray L. Wilbur, San Francisco.

SURGERY
J. N. Jackson, Kansas City, Mo.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
R. R. Smith, Grand Rapids, Mich.

OPHTHALMOLOGY
Melville Black, Denver.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Chevalier Jackson, Pittsburgh, Pa.

DISEASES OF CHILDREN
J. P. Sedgwick, Minneapolis.

PHARMACOLOGY AND THERAPEUTICS
Ray L. Wilbur, San Francisco.

PATHOLOGY AND PHYSIOLOGY
Richard M. Pearce, Philadelphia.

STOMATOLOGY
G. V. I. Brown, Milwaukee, Wis.

NERVOUS AND MENTAL DISEASES
C. Eugene Riggs, St. Paul, Minn.

DERMATOLOGY
William A. Pusey, Chicago.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
M. Smith, Little Rock, Ark.

GENITO-URINARY DISEASES
V. D. Lespinasse, Chicago.

HOSPITALS
Fred A. Washburn, Boston.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.

THE CHARMS OF THE CONVENTION CITY

A Descriptive Article from the Committee on Arrangements of This Queen of Resorts

The varied and unique charms of this city by the sea cannot be set down in a few desultory paragraphs, and hardly with a facile pen backed by the eloquence of a Cicero. Unique in climate, environment and situation, Atlantic City makes an appeal to persons of widely varied interests and inclinations. Its dry atmosphere, its surf bathing, its gay and picturesque Boardwalk with multitudinous attractions and amusements, and its hotel accommodations make it one of the greatest convention cities in the world. The advantages of holding a convention in Atlantic City may be understood when it is stated that the attendance at conventions held here is always greater than at the places at which preceding meetings were held. In some cases the increase is from 10 to 20 per cent., in most cases from 30 to 50 per cent., while it has occasionally been higher. No European resort is said to compare with it in natural advantages. One of the show places of America, it is at the same time the finest health and pleasure resort in the world. Those who have been here always want to come again, and those who have not are eager to see for themselves what constitutes the charm of this great meeting-place.

HOTELS

There are more than 100 large hotels and 900 smaller ones. Besides these, numerous boarding-houses cater to the comfort of the visiting public. Atlantic City is in a class with New York, Boston and Chicago in the superiority of its hotel accommodations, and the beach-front hotels are equal to those anywhere in appointments, cuisine and service. Many of these hotels are palaces in appointments and furnishings, maintain splendid orchestras and vie in securing the comfort of their guests. Atlantic City is fortunate in its proximity to three great cities. There is an excellent train service to these points and through them to all points throughout United States and Canada.

CLIMATE AND SANITATION

The city is situated on an island 10 miles long and less than a mile in width. The exceptional purity of the air and the dry fogs for which the place is noted have undoubted curative qualities, as the discerning physician will quickly observe. The healing powers of brine bathing—in summer on the humanity-crowded beach, and in winter through the numerous bathing establishments—are already well known to most persons.

The climate is dry and temperate, the average rainfall being 30 inches annually, and the average temperature 51.6. The soil is sandy and porous, readily absorbing the rainfall. The broad, safe beach, with an absence of shifting sands, is an ideal play place for the 150,000 who in summer throng in jubilant masses into the sea. It is said to be the most perfect bathing beach on the Atlantic coast. The climatic conditions are thus unsurpassed and ideal. In thirty-nine years Atlantic City has had an average of only two days in each year in which the temperature was 90 degrees or over. In winter the Gulf Stream modifies the surrounding salt water and keeps up a temperature of very moderate average; in summer the prevailing winds are from the south.

In brief, the climate of Atlantic City is adapted to almost every condition that is brought to the attention of the average practitioner, but it is particularly beneficial in certain ailments. As a place for convalescents to recuperate after an operation, or for recovery after a wasting illness, it is ideal. It has long been a resort for hay-fever patients, suggested as equal to an ocean trip without that dread of all travelers, seasickness. The patient may sit out on the piers, reading or writing and absorbing the pure air, with no fear that some wandering pollen may be wafted toward him.

Fig. 1.—Atlantic City in an early period.

ATLANTIC CITY AS A PLACE TO DWELL

A considerable advantage possessed by Atlantic City is its permanent character. It has a large resident population, clean, wide, well-paved streets, good marketing facilities, an excellent electric-light system, and everything, in short, that goes with a large city except great manufacturing establishments and factories. All who visit Atlantic City know of its famous Boardwalk, its luxurious hotels and its grand beach, but there are many who have yet to learn that one of the most attractive features of the "World's Playground" is comprised in the thousands of comfortable homes within its borders.

Atlantic City is an ideal place in which to "rest, recuperate and recreate," but above all it is a model location for permanent residences. From whatever point of view the subject be considered, whether of hygiene, convenience, comfort or economy, Atlantic City has advantages to offer that cannot be found elsewhere. Each year such benefits are coming to be more and more recognized, and because of them, in an eminent degree, the population of the city has increased from about twelve thousand in 1890 to over fifty-five thousand in 1914, the latter figures being accepted by the United States Treasury Department as approximately correct.

THE BEGINNING OF THE CITY

In the early days of the city the cottages were erected entirely with a view to summer residences. They were simply frame shells, generally two stories high, very few having even brick foundations. Bath-tubs were unnecessary because there was plenty of bathing water in the ocean. Drinking-water was secured by catching the rain from the roof in cisterns or barrels. If heat were provided at all it was supplied through the medium of old-fashioned portable stoves.

The only feature of the old-style house that survives is the porch, which has been modernized and improved on until it has become a thing of architectural beauty and luxury. With the development of modern utilities, including water, sewerage, gas, electricity and trolley service, the old-fashioned flimsy cottages gave way to palatial homes, new residential sections were improved and well-equipped apartment-houses came into being. As a result the city can boast of thousands of residences to suit the most fastidious taste, while hundreds of apartment-houses, many of them with automatic elevators, are equipped in a manner to rival cosmopolitan structures. The houses as a rule are heated by hot water or steam with auxiliary open wood fire-places. They are fitted up with both gas and electricity, while the gas hot-water heater is frequently installed.

BEAUTIFUL RESIDENCES

Generally the cottages are erected on open ground and surrounded by green lawns, terraces and imposing flower-beds. This gives the opportunity for the continual sunshine which has made Atlantic City famous to penetrate to every part of the house. The furnishings are often gorgeous but also appropriate. Most of the houses are to be let furnished ready for housekeeping by the season or by the year, at prices that give only a fair percentage of return on the investment and that are no higher than charges for similar service in the larger cities.

Housekeepers from other cities who have had experience in Atlantic City have spoken in high praise of the Atlantic City markets. Everything in season can be obtained fresh and luscious at reasonable rates. New York and Philadelphia markets are within easy reach, while hundreds of farmers in the immediate vicinity dispose of their entire produce, including poultry, eggs and butter, in Atlantic City.

CHURCHES AND SCHOOLS

There are churches for every denomination, and in some cases several for each, so distributed as to make them easily accessible. The clergymen officiating are among the leaders in their profession.

The Atlantic City public schools, including a most efficient high school, are reputed to be among the most proficient in the world. There are in addition several desirable private schools for both boys and girls. A resident here, whether in cottage or hotel, can send children to any of the schools, for a short or long time, whether it be for a week, month, term or year.

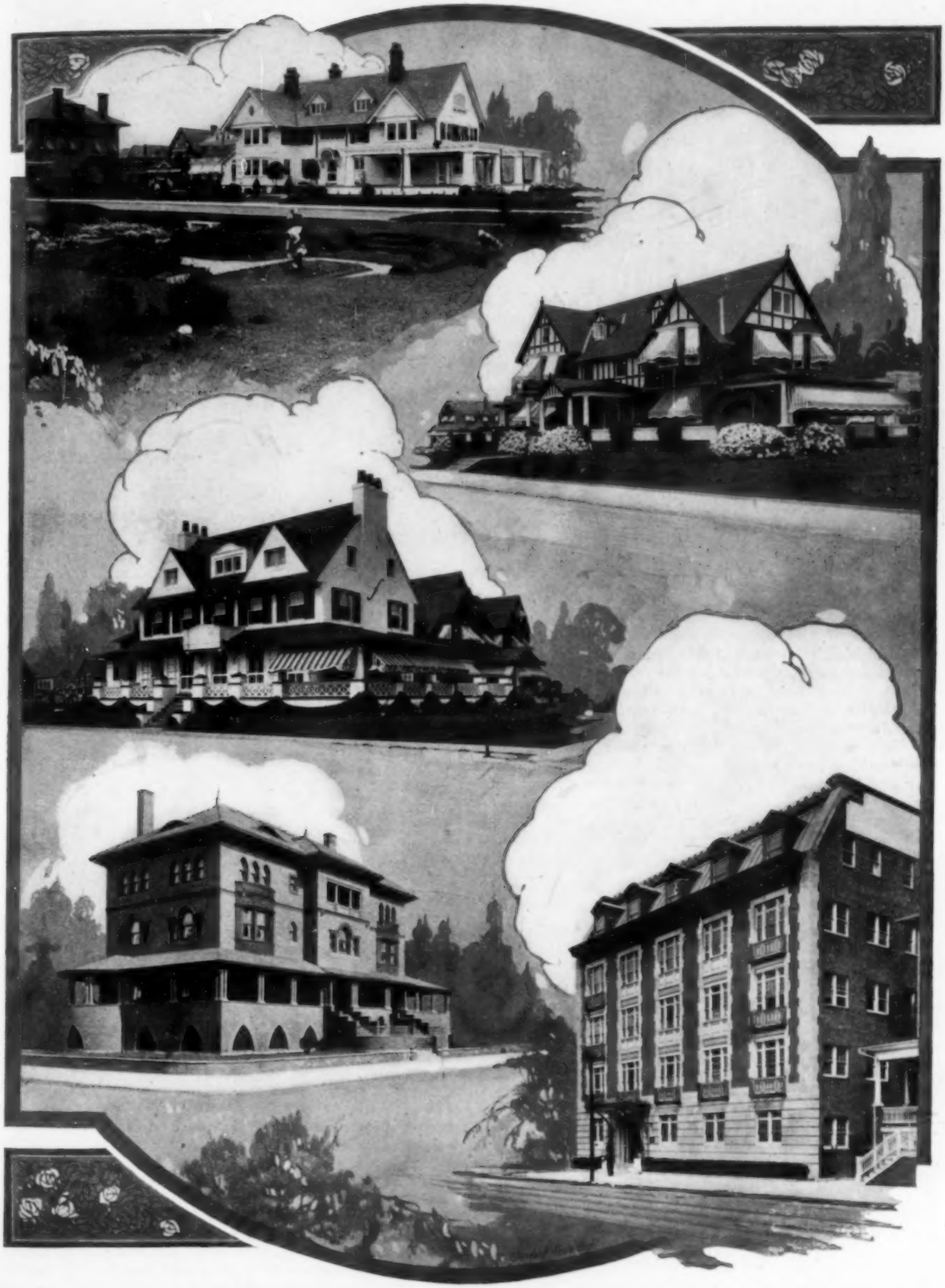


Fig. 2.—A group of modern Atlantic City residences and apartment buildings.

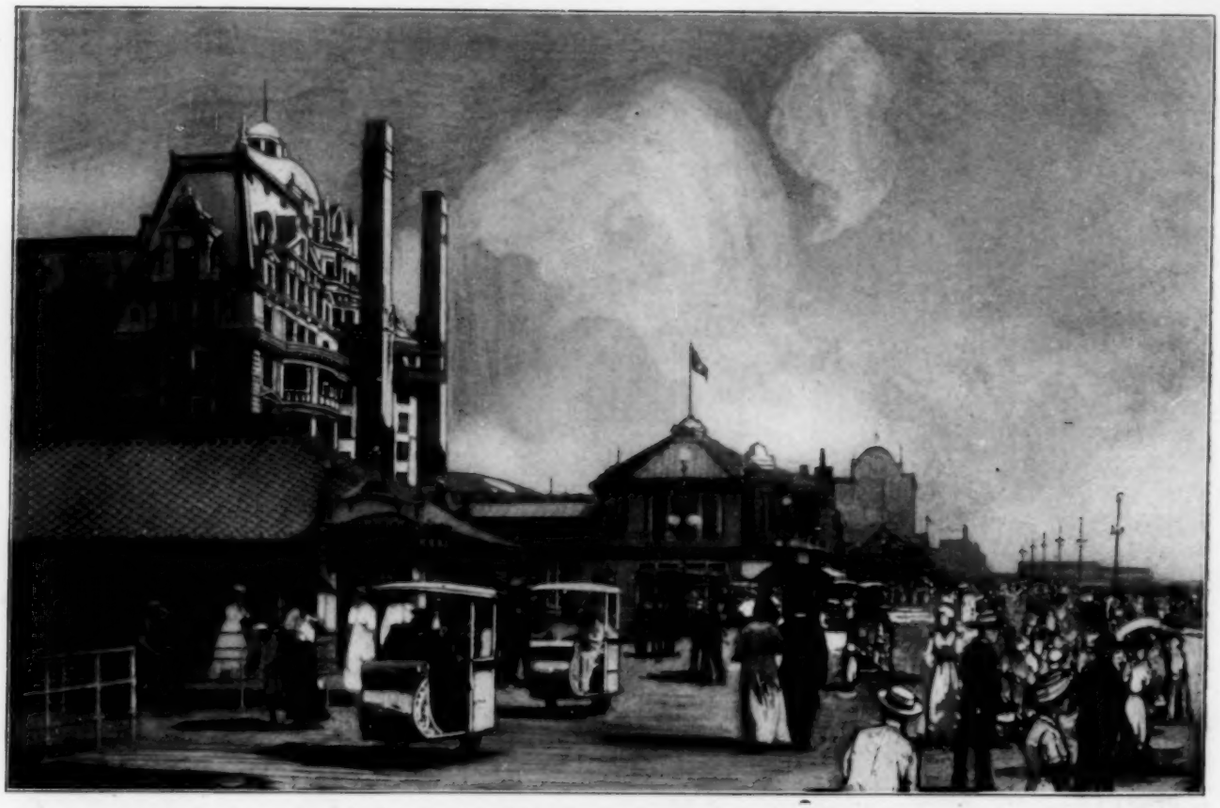


Fig. 3.—View of the Boardwalk, the hotels and a beach scene.

SERVICE TO PHILADELPHIA

Philadelphia is so near that commuting is as quickly accomplished as from points, for instance, on the Pennsylvania R. R. main line. A Lower Chelsea cottager can take the Atlantic Avenue trolley line, transfer to the steam train, and by subway connection in Philadelphia, reach Broad and Chestnut streets within an hour and a half. He can leave for New York at 7:45 a. m., have six hours in New York and be again in his home before 9 o'clock at night. Again, he can leave for New York at 9:15 in the morning, have three hours in New York and be in his home at 6:30 in the evening. The post-office gives frequent mail service, while the newspapers of all the important cities of the world are obtainable each day.

THE CITY SHOPS

The ladies' shops in Atlantic City are so enticing that many patrons from adjacent cities, including New York, Philadelphia, Baltimore, Washington and Pittsburgh, come to patronize them. It is the height of luxury for women to take a rolling-chair and proceed from store to store to do their purchasing, without leaving the chair. Many of the shops are branches of noted New York, London and Paris houses, and the newest importations are seen here even sooner than they appear in the metropolis. Alongside these shops, catering to the modern wants of the public, are others featuring the wares of Japan, Armenia, Turkey, Egypt and Syria. They have beautiful displays of colorful merchandise, delicate cobwebby laces, articles of virtu of great artistic value, oriental carpets and rugs of wonderful beauty, and costly and exquisite jewels. The dark-skinned foreign salespeople lend an added charm with their expressive eyes, quaint speech and eloquent gestures.

RECREATION IN ATLANTIC CITY

For recreation, Atlantic City is the place *par excellence*. There is the always famous Boardwalk, the strand with its piers and the ocean bathing. Then come unparalleled waters for boating and fishing. The best kind of roads around the city, with paved streets within, make automobiling a luxury. The finest theatrical productions are shown in Atlantic City, many of the new plays being produced here for the first time. One of the finest golf-clubs in the country is at Northfield, accessible to visitors, and a new course is being laid out at Absecon which is to be called the "Millionaires' Club."

There are endless diversions to be found in the wonders of the ocean view. Delightful memories of golden moments by the booming and ever-restless sea may be gathered, and charming encounters with the spirit of romance that seems in the very atmosphere. Out at the inlet are fleets of little sail-boats ready to be hired by disciples of Izaak Walton who would while away the time with rod and reel, or pleasure parties eager to sail over the smooth waters into the deeper curve of the sea. There are many sand-bars situated along the upper end, and on bright days the clam-diggers may be discerned across the stretch of waters digging for clams in what appears from the shore to be deep water. Quiet or excitement may be obtained as the taste may run, and cottages can be obtained where diversion is plentiful or on the outskirts where all is peaceful.

THE BOARDWALK

The most peculiar and distinctive feature of Atlantic City is of course the famous Boardwalk. It is an ocean promenade erected about 10 feet above the beach proper. It is 8 miles long with a practically unobstructed ocean view. On its widest portion it is 60 feet wide. The topography of the city being narrow, and the Boardwalk running along its entire length, all of the cottages are brought within easy reach of the great esplanade.

On this famed thoroughfare a great procession marches and countermarches in an unceasing, never-ending throng. All seems animation and gaiety. The members of the fair sex are clad in the most wonderful garments of the passing mode. The most extreme styles prevail, and eccentricities

in color costuming and design are so general as to attract little attention. Many new fads have had their première on the Boardwalk. Here the first Teddy Bear put in an appearance, and the harem skirt, the Cleopatra stocking and the skillet hat were first seen in America on the famous Boardwalk of Atlantic City.

At night it is a scene of fairy-like splendor. The sparkling jewels of the fair women who promenade, clad in wonderful gowns of every color and description, seem to vie with the myriad of electric lights stretching for miles on either side.

Six great piers extend out into the sea where concerts by noted bands may be enjoyed, net-hauls witnessed, and hippodromes and quality vaudeville used to fill spare moments. Dancing in all the modern forms is of course a popular diversion. Several of the piers have ballrooms with excellent floors for the accommodation of those who care to "trip the light fantastic." Tango contests are held throughout the winter and exhibitions frequently given by noted exponents of the art.

THE PEERLESS CONVENTION CITY

Thus it may be seen that Atlantic City has advantages for residents rarely combined in one locality. It has health and comfort, combined with convenience and economy, that make life worth living. Each year adds to the number of families retired from business that have selected Atlantic City as a final abode. But above and beyond all the attraction is the almost perpetual sunshine, or as it has been said of Atlantic City, "nine months of sunshine and three months of mild winter."

Fig. 4.—The Country Club.

TRANSPORTATION TO THE MEETING

Rates for Round Trips to Atlantic City—Announcement of the Transportation Committee

The Committee on Transportation and Place of Session suggests that Fellows consult the local ticket-agent in their home town for full information regarding rates, time limits, extensions and stop-over privileges preparatory to purchasing railway ticket for the Atlantic City session. The tariff schedules on file at every ticket-office will allow the local agent to quote rates from any point. In addition to this, with the assistance of the agent, a physician can plan for an additional trip either going or coming. These side trips, of course, can be arranged for from Atlantic City, but in most instances a better rate can be obtained if a complete itinerary is submitted to the local agent. The committee announces the following rates for the Atlantic City session:

Special Tourist Rates

The Trunk Line Association has authorized a rate of 2 cents a mile in each direction with a minimum of $1 for the round trip, going and returning via same route only; tickets to be sold and good, going, June 20 to 22, and returning to reach the original starting-point not later than June 29.

The Western Passenger Association calls attention to the very favorable tourist fares to Atlantic City which will be available to persons desiring to attend the annual session. The general basis of these fares is 2 cents a mile in each direction up to the eastern gateway, added to the fares tendered therefrom. These fares are on as liberal a basis as are made by the lines of the Western Passenger Association.

The New England Passenger Association announces the following fares: Two cents per mile in each direction, short-line mileage, plus fares tendered from basing points for the round trip; going and returning via same route only. Reductions apply only from principal stations where tariffs are on file and through tickets are in stock. Other stations will require not less than forty-eight hours' notice to the ticket-agent so that fares and tickets may be obtained from the general passenger department of the railroad interested. Tickets to be sold and good going June 20-22, and returning to reach original starting-point not later than June 29. Reductions will not apply on the Bangor & Aroostook R. R., or Eastern Steamship Corporation.

The Southwestern Passenger Association calls attention to the summer tourist fares which are in effect from practically all points in this territory to Atlantic City at the time the session is held. These fares are on the basis of 2 cents per mile, with long limits.

The Trans-Continental Passenger Association announces that the several lines of this association individually announce special fares from California and North Pacific Coast points to their eastern termini and to certain destinations east of their Eastern termini, as follows: From California common points to Chicago, $72.50; to New York or Philadelphia, $108.50. Tickets will be sold from North Pacific Coast points on certain days in May, and daily from June 1 to September, both inclusive, 1914, and from California on special dates in April to September, inclusive, full details concerning which can be obtained from local ticket-agents. Nine-month tourist fares and arrangements approximating 2 cents per mile in each direction, or about one fare and one-

third for the round trip, are in effect daily from California and North Pacific Coast common points to Chicago, St. Louis, New Orleans and other points. From California to Chicago and return, $109.50. St. Louis or New Orleans and return, $104.

American Medical Special Train to Atlantic City

A special train of all-steel equipment, including club car, drawing-room sleeping-cars, dining-car and observation-car, will leave Chicago, Twelfth Street Station, 6:30 p. m., Sunday, June 21, over the Michigan Central "Niagara Falls Route," via Buffalo and the Pennsylvania Railroad, and will reach Atlantic City Monday, June 22 in ample time for dinner. The round-trip fare from Chicago will be $29.50, with a thirty-day limit from date of sale, by which time the original starting point must be reached.

This special train will be stopped at Niagara Falls, Monday morning at 7 o'clock or a little after, at one of the most favorable places for viewing the falls. A sufficient length of time will be allowed to permit passengers to leave the train for this purpose. Special cars from different points west of Chicago are now being arranged, and as hereafter noted the Chicago Medical Society will have space reserved on the train.

Stop-over privileges will be allowed at all points on the Michigan Central, including Niagara Falls. A stop-over not to exceed ten days will be allowed by the Pennsylvania Railroad at Buffalo and Philadelphia on deposit of the ticket with the depot ticket-agent immediately on arrival. This will permit a stop-over at Philadelphia and a side trip to New York. The round-trip fare from Philadelphia to New York is $4. Round-trip side trips may be made from Niagara Falls to Toronto, $2, limit two days, and to Thousand Islands and Alexandria Bay, $11.75, limit thirty days. Sight-seeing tours at Niagara Falls may be obtained from the ticket-agents at Niagara Falls, covering circuit tour of Niagara River with view of the Falls and Rapids, at $1, and including additional carriage ride around Goat Island, 50 cents extra.

Tickets will be accepted for transportation, meals and berth extra, on steamers of the D. & C. Navigation Company between Buffalo and Detroit on presentation to ticket-agent or purser of the steamer line.

Further information can be obtained from representatives of the Michigan Central Railroad, or by addressing Mr. C. C. Clark, General Agent, Passenger Department, 228 South Clark Street, Chicago.

CHICAGO MEDICAL SOCIETY SPECIAL CARS

Dr. Charles H. Parkes, secretary, announces that special cars reserved for members of the Chicago Medical Society will be attached this year to the American Medical Special. This will give those members who go to Atlantic City a delightful "personally conducted" trip. The schedule planned is to start from Chicago at 6:30 on the evening of Sunday, June 21. The train will stop for a short time at Niagara Falls and the party will reach Atlantic City in time for dinner Monday evening. Members of the Chicago Medical Society planning to go to Atlantic City should at once reserve space on these special cars. Further details will be found in the announcement of the American Medical Special.

J. RAWSON PENNINGTON, Chairman.

PENNSYLVANIA LINES

The Pennsylvania Lines will operate a special train leaving Chicago at 3 p. m., Sunday, June 21, reaching Atlantic City about 2 o'clock the next afternoon. Train will run through solid, will be an all-steel train, including compartment-observation car, library-club car, standard sleeping-cars and Pennsylvania dining-cars, serving table d'hote dinner at $1 per plate and à la carte breakfast and luncheon the next day. The tourist fare, Chicago to Atlantic City and return, will be $29.50, with a limit of thirty days, and may read via Washington if parties so desire, enabling them to stop at Baltimore and Washington on the return trip for ten days each, but not to exceed the final limit, date of deposit counting as one day, if deposited with depot ticket-agent immediately on arrival. As many of the physicians and surgeons will want to go on to New York after the convention is over, thirty-day tickets can be purchased to New York and return at fare of $30 and an opportunity will be given to deposit these tickets at Philadelphia, where stop-over will be granted for ten days, but not to exceed the final limit of the ticket, date of deposit counting as one day, and excursion tickets purchased from Philadelphia to Atlantic City and back at $2.50. Diverse route tickets to New York and Boston ranging in price from $34 to $46 will also be on sale. These tickets will also be good on regular trains on payment of extra fare on trains on which this is charged, except Broadway Limited, Trains 28 and 29. Those coming from beyond Chicago can purchase tickets from their home agent which will be good on the special train.

THE GRAND TRUNK SYSTEM

The Grand Trunk Railway System announces that it will have on sale June 1 daily up to and including September 30, round-trip, thirty-day excursion tickets to Atlantic City, via the Grand Trunk-Lehigh Valley Double Track Route, via Philadelphia and the Scenic Route of America; also sixty-day circle tour tickets going via New York, returning via Philadelphia, Baltimore and Washington at the following rates:

Chicago to Atlantic City and return, $29.10, thirty-day limit.

Chicago to New York, returning via Philadelphia, Baltimore and Washington, $32.40, sixty-day limit.

On the thirty-day tickets, liberal stop-overs are allowed in the United States and all intermediate points in Canada. On the sixty-day tourist tickets, stop-overs are allowed at all intermediate points en route.

The Grand Trunk Railway System operates three solid vestibule trains leaving Chicago daily at 11:05 a. m., 3:30 p. m. and 11:05 p. m., carrying steel underframe coaches, steel Pullmans and dining-cars, electric lighted throughout. It will also have many other interesting summer trips on sale beginning June 1, including circle tours going one way and returning another.

BALTIMORE AND OHIO RAILROAD

The "picturesque" Baltimore & Ohio Railroad offers the advantages of three all-steel, electrically lighted trains daily between Chicago and Philadelphia, where connection is made with the "mile-a-minute" trains on the Atlantic City Railroad for Atlantic City. These trains leave Chicago at 8 a. m., 11 a. m. and 5:45 p. m., and arrive in Philadelphia at 10:15 a. m., 2:02 p. m. and 8:19 p. m., respectively, the next day. Trains leave Philadelphia for Atlantic City every hour from 5 a. m. to 11 p. m. The trains passing through the mountains in daytime are equipped with observation cars from which may be viewed some of the most beautiful scenery in the United States. On tickets sold to Atlantic City and return at $29.10, the return limit on which will be thirty days from date of sale, stop-over within the limit of the ticket will be given at all points in both directions. In addition to the reduced fares to Atlantic City, summer excursion tickets will be sold to New York and Boston and return at greatly reduced fares, which may be taken advantage of by making a side trip from Philadelphia to Atlantic City and return at a cost not to exceed $2 for the round trip. The summer excursion tickets sold to New York and Boston and return will be limited for return within sixty days from date of sale, and will be valid going one way and returning another.

HOTEL RESERVATIONS

Although Atlantic City is a city of hotels, and can easily accommodate those in attendance on the annual session, Fellows are urged to make their hotel reservations early. It will be a great comfort on arriving at Atlantic City to go at once to a hotel which is expecting you rather than to make a round of hotels, finding a number of them completely filled and finally being compelled to take the first lodgings which can be found in a hurried personal search. The list of hotels appearing in this issue locates the different hotels and gives their rates. Make your selection, write to the manager and take with you to Atlantic City his reply assuring you that a reservation has been made for your use. Then, on arriving at Atlantic City all you will have to do is to go to this hotel and register.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF OPENING MEETING

Apollo Theater

Tuesday, June 23, 10:30

Music.

Call to Order. President, JOHN A. WITHERSPOON, Nashville, Tenn.

Invocation. REV. HENRY MERLE MELLEN, Atlantic City.

Address of Welcome. ENOCH HOLLINGSHEAD, Pemberton, N. J., President, Medical Society of New Jersey.

Introduction and Installation of President-Elect VICTOR C. VAUGHAN, Ann Arbor, Mich.

Address. VICTOR C. VAUGHAN, President.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of Atlantic City and other information. To prevent misunderstandings and to protect the interests of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN ST. PAUL'S CHURCH

CHAIRMAN, CHARLES LYMAN GREENE, ST. PAUL, MINN.; SECRETARY, ROGER S. MORRIS, CLIFTON SPRINGS, N. Y.

Tuesday, June 23—2 p. m.

Will Sprue Become Endemic in the United States? Notes on Cases Invalided from the Tropics (10 minutes).
H. B. HIATT, High Point, N. C., and WILLIAM ALLAN, Charlotte, N. C.

The Syndrome of Adrenal Insufficiency (15 minutes).
TOM A. WILLIAMS, Washington.

Neurasthenia and Tuberculosis (Concealed) (15 minutes).
GEORGE DOUGLAS HEAD, Minneapolis.

The Nervous Side of Physical Disorders (15 minutes).
CHARLES P. EMERSON, Indianapolis.

The Use of Atophan and Radium Emanation in the Treatment of Gout and the Arthritides (15 minutes).
ARTHUR F. CHACE, New York.

Intrarectal Administration of Sodium Salicylate in Acute Rheumatic Fever with Satisfactory Results (10 minutes).
LOUIS G. HEYN, Cincinnati.

Wednesday, June 24—9 a. m.

SYMPOSIUM ON NUTRITION

JOINT MEETING WITH THE SECTION ON PATHOLOGY AND PHYSIOLOGY, IN ST. PAUL'S CHURCH

The Specificity of the Nutrients.
L. B. MENDEL, New Haven, Conn.

The Specific Dynamic Action of Food.
GRAHAM LUSK, New York.

The Intermediary Metabolism.
OTTO FOLIN, Boston.

The Total Energy Requirement in Disease as Determined by Calorimetric Observations.
EUGENE F. DU BOIS, New York.

Wednesday, June 24—2 p. m.

The Heart in the Pneumonias (10 minutes).
ROBERT N. WILLSON, Philadelphia.

Differentiation of Various Types of Aortic Insufficiency (10 minutes).
ROBERT B. PREBLE, Chicago.

The Treatment of Heart Involvement in Syphilis (15 minutes).
HARLOW BROOKS and JOHN CARROL, New York.

The Four Common Types of Heart-Disease (15 minutes).
RICHARD C. CABOT, Boston.

Cardiovascular and Renal Responsibility in the Disturbances of Cardiorenal Disease (15 minutes).
ALFRED STENGEL, Philadelphia.

Effect of Low and High Nitrogen Diet on Renal Function Tests in Chronic Nephritis (10 minutes).
C. FROTHINGHAM, JR., Boston.

Studies in Liver Function (15 minutes).
L. G. ROWNTREE, Baltimore.

Thursday, June 25—9 a. m.

Essential Factors in the Diagnosis of Duodenal and Gastric Ulcers (15 minutes).
CHRISTOPHER GRAHAM and GEORGE EUSTERMAN, Rochester, Minn.

End-Results in Gastric and Duodenal Ulcer (15 minutes).
ELLIOTT P. JOSLIN, Boston.

Gastric Cancer in the Young: A Study of Fourteen Cases in Patients Under the Age of 31 (15 minutes).
FRANK SMITHIES, Chicago.

Focal Infection. Its Broader Application in the Etiology of General Disease (15 minutes).
FRANK BILLINGS, Chicago.

The Newer Bacteriology of Various Infections Determined by Special Methods (15 minutes).
E. C. ROSENOW, Chicago.

The Dead Space and Alveolar Air in Emphysema and Bronchial Asthma (15 minutes).
C. F. HOOVER, Cleveland.

Thursday, June 25—2 p. m.

Late Manifestations of Inherited Syphilis with Especial Reference to Arterial Disease (15 minutes).
HENRY F. STOLL, Hartford, Conn.

Various Types of Lues: A Clinical and Laboratory Study. The Abelin Reaction. Direct Subdural Injections (15 minutes).
W. E. ROBERTSON and J. V. KLAUDER, Philadelphia.

A Study of the Arneth Formulas (10 minutes).
GRAHAM E. HENSON, Jacksonville, Fla.

Salvarsan in Pernicious Anemia (15 minutes).
JAMES S. BROTHERHOOD, Clifton Springs, N. Y.

The Medical Application of Blood-Transfusion by the Syringe-Cannula System without Skin Incision (10 minutes).
E. LINDEMAN, New York.

SECTION ON SURGERY

MEETS IN MORRIS GUARDS' HALL

CHAIRMAN, CHARLES H. FRAZIER, PHILADELPHIA; SECRETARY, E. S. JUDD, ROCHESTER, MINN.

Tuesday, June 23—2 p. m.

Chairman's Address: The Cerebrospinal Fluid as a Problem in Intracranial Surgery.
CHARLES H. FRAZIER, Philadelphia.

A Contribution to the Surgery of Brain Tumors.
HERMAN KUTTNER, Breslau, Germany.

Osteoplastic Closure of the Trifacial Canals. An Experimental and Clinical Study Illustrated by Lantern-Slides.
ALLEN B. KANAVEL, Chicago.

Treatment of Unlocalized Intracranial Injuries by Drainage Through a Subtemporal Approach.
VILRAY P. BLAIR, St. Louis.

Consideration of 275 Cases of Acute Appendicitis, with Special Reference to Complications and Causes.
ARCHIBALD MACLAREN, St. Paul, Minn.

Has the Last Word Been Spoken Concerning Appendicitis?
J. E. MOORE, Minneapolis.

Wednesday, June 24—9 a. m.

Plastic Operations on the Kidney, and the Practical Application of Facts Demonstrated Experimentally.
JOHN B. MURPHY, Chicago.

Congenital Cystic Kidney. F. B. LUND, Boston.

A Simple Method of Tapping a Distended Bladder and Making Permanent Drainage.
W. L. RODMAN, Philadelphia.

Testing the Efficiency of the Collateral Circulation; Its Importance in Determining Surgical Intervention and of Applying the Tests. R. MATAS, New Orleans.

Aneurysm of the Posterior Tibial Artery, with Report of Two Cases. ALEXIUS MCGLANNAN, Baltimore.

Experimental Surgery of the Heart and Lungs.
AXEL WERELIUS, Chicago.

Wednesday, June 24—2 p. m.

Oration on Surgery: The Relations of the Surgeon to the Conquest of Cancer. JOSEPH BLOODGOOD, Baltimore.

Exploration of the Knee-Joint and Its Teachings.
F. M. CORNER, London, England.

Exophthalmos and Methods of Surgical Treatment.
C. H. MAYO, Rochester, Minn.

Mechanism for Injuries of the Shoulder Region: Results of Forty Operations. T. TURNER THOMAS, Philadelphia.

Operation on Thoracic Wall for Relief of Bronchial Asthma.
E. WYLLYS ANDREWS, Chicago.

Aperiosteal Amputation (Hirsch-Bunge).
HENRY H. M. LYLE, New York.

Thursday, June 25—9 a. m.

Anoci-Association in Relation to Operations on Gall-Bladder and Stomach. GEORGE W. CRILE, Cleveland.

A Clinical Research in the Surgery of the Upper Abdomen.
ARTHUR D. BEVAN, Chicago.

The Problem of Intestinal Obstruction: Effort to Explain Variable Clinical and Experimental Results.
FRED T. MURPHY and BARNEY BROOKS, St. Louis.

Internal Hernia Due to an Aberrant Middle Colic Artery.
ALEXANDER PRIMROSE, Toronto.

The Rodman Operation for Cancer of the Breast.
DONALD GUTHRIE, Sayre, Pa.

Thursday, June 25—2 p. m.

SYMPOSIUM ON SURGICAL SERVICE IN THE HOSPITAL

JOINT MEETING WITH THE SECTION ON HOSPITALS IN MORRIS GUARDS' HALL

The Standardization of the Surgeon.
J. M. T. FINNEY, Baltimore.

The Standardization of the Surgical Clinic.
F. D. GILBRETH, New York.

The Surgical Service in Hospitals.
H. O. COLLINS, Minneapolis.

Friday, June 26—9 a. m.

Some Present-Day Problems in the Surgical Treatment of Gastric and Duodenal Ulcer.
HAROLD COLLINSON, Leeds, England.

Cancer Vaccine and Anticancer Globulins as an Aid in the Surgical Treatment of Malignancy.
J. W. VAUGHAN, Detroit.

Hodgkin's Disease.
C. H. BUNTING, Madison, Wis., and J. L. YATES, Milwaukee, Wis.

Penetrating Wounds of the Abdomen.
RANDOLPH WINSLOW, Baltimore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN MORRIS GUARDS' HALL

CHAIRMAN, E. GUSTAV ZINKE, CINCINNATI; SECRETARY, BROOKE M. ANSPACH, PHILADELPHIA

Tuesday, June 23—2 p. m.

Chairman's Address: A Few Important but Unsolved Problems in Obstetrics, Gynecology and Abdominal Surgery.
E. GUSTAV ZINKE, Cincinnati.

The Treatment of Albuminuria of Pregnancy.
EDWARD J. ILL, Newark.

The Treatment of the Toxemias of Pregnancy.
A. J. RONGY, New York.

The Treatment of Placenta Praevia.
EDWARD P. DAVIS, Philadelphia.

Hysterotomy. JOHN B. DEAVER, Philadelphia.

Wednesday, June 24—9 a. m.

SYMPOSIUM ON SURGERY OF THE LARGE INTESTINE

The Pathogenesis of the Pericolic Membranes. (Lantern Demonstration.)
ARTHUR E. HERTZLER, Kansas City, Mo.

Experimental and Clinical Studies of Colon Stasis.
JOSEPH RILUS EASTMAN, Indianapolis.

The Condition of a Few Patients Two Years After Ileosigmoidostomy. CHARLES L. BONIFIELD, Cincinnati.

Resection of the First Portion of the Large Intestine and the Resulting Effect on Its Function.
WILLIAM J. MAYO, Rochester, Minn.

Some Surgical Phases of the Sigmoid.
CHARLES A. L. REED, Cincinnati.

Wednesday, June 24—2 p. m.

SYMPOSIUM ON SPECIFIC AND PROTECTIVE FERMENTS

JOINT MEETING WITH THE SECTION ON PATHOLOGY AND PHYSIOLOGY AND THE SECTION ON PHARMACOLOGY AND THERAPEUTICS, IN MORRIS GUARDS' HALL

The Present Status of the Investigation.
EMIL ABDERHALDEN, Halle, Germany.

Parenteral Protein Digestion.
VICTOR C. VAUGHAN, Ann Arbor, Mich.

The Mechanism, Diagnostic and Prognostic Significance of Skin Reaction. FREDERICK P. GAY, Berkeley, Cal.

Limitations of the Dialysis Method as a Practical Test for Pregnancy. CHESTER M. ECHOLS, Milwaukee.

Biologic Tests in Pregnancy and Cancer.
C. F. JELLINGHAUS and J. R. LOSEE, New York.

Thursday, June 25—9 a. m.

The Present Status of Pyelography. (Lantern Demonstration.)
FLOYD E. KEENE and HENRY K. PANCOAST, Philadelphia.

Personal Experience with Exclusion of the Pylorus in the Treatment of Ulcer. WILLARD BARTLETT, St. Louis.

Common Errors in Gall-Tract Surgery.
C. E. RUTH, Des Moines.

Thrombosis and Emboli: Their Significance and Consequences in Abdominal and Pelvic Surgery.
ANGUS MCLEAN, Detroit.

The Application of Taylor Factory-Management to Hospital Surgery. ROBERT L. DICKINSON, Brooklyn.

Thursday, June 25—2 p. m.

SYMPOSIUM ON UTERINE HEMORRHAGE

The Pathologic Physiology of Uterine Bleeding.
EMIL NOVAK, Baltimore.

Physiologic and Pathologic Variations of the Generative Organs Causing Atypical Bleeding; Diagnostic Aspects.
JOHN G. CLARK, Philadelphia.

Radium Treatment of Uterine Hemorrhage.
HOWARD A. KELLY, Baltimore.

Roentgen Therapy in Uterine Hemorrhage.
GEORGE E. PFAHLER, Philadelphia.

Fundamental Intrapelvic Perineorrhaphy.
ALBERT GOLDSPOHN, Chicago.

Friday, June 26—9 a. m.

Pelvic Varicosities. A Definite Symptom-Complex.
WILLIAM EDGAR DARNALL, Atlantic City, N. J.

The Embryology of the Umbilical Region (Lantern Demonstration). THOMAS S. CULLEN, Baltimore.

Vesicovaginal and Rectovaginal Fistulas.
HENRY O. MARCY, Boston.

Potent Factors in Failure of Operations for Retrodisplacement of the Uterus. FREDERICK C. HOLDEN, New York.

The Importance of a Clear Understanding of Changes in the Nervous System Incident to Pregnancy.
RALEIGH R. HUGGINS, Pittsburgh, Pa.

SECTION ON OPHTHALMOLOGY

MEETS IN THE PAROCHIAL SCHOOL

CHAIRMAN, FRANK C. TODD, MINNEAPOLIS; SECRETARY, GEORGE S. DERBY, BOSTON

Tuesday, June 23—2 p. m.

Chairman's Address. FRANK C. TODD, Minneapolis.

Tumors of the Optic Nerve.
W. GORDON M. BYERS, Montreal.

Ocular Manifestations of the Toxemia of Pregnancy; Clinical Report of a Case. WARD A. HOLDEN, New York.

Two Cases of Acute Retrobulbar Neuritis Associated with Marked Acetonuria.
LEE MASTEN FRANCIS, Buffalo, N. Y.

Chronic Ocular Tuberculosis. Necropsy Findings in a Case of Tuberculosis of the Hypophysis Cerebri. With lantern demonstration. F. H. VERHOEFF, Boston.

Wednesday, June 24—9 a. m.

Epithelioma of the Lids. CARL FISHER, Rochester, Minn.

Hereditary Glaucoma (Simplex); the Report, with Operative Notes, of Four Generations of One Family.
F. PHINIZY CALHOUN, Atlanta, Ga.

Sclerocorneal Trephining for Glaucoma, with Tabulated Results of Seventy-Six Operations Performed by Col. R. H. Elliot and a Clinical Study of Twenty-Seven Operations by the Author.
WALTER R. PARKER, Detroit.

Late Infection Following a Trephining for Glaucoma.
E. V. L. BROWN, Chicago.

Value of Miotics in Chronic Glaucoma.
WILLIAM CAMPBELL POSEY, Philadelphia.

Wednesday, June 24—2 p. m.

Atrophy of the Optic Nerve in Myopia.
THEODORE AXENFELD, Freiburg, Germany.

International Standard for Testing Vision, and Standardizing Other Visual Tests. EDWARD JACKSON, Denver.

Is Tuberculosis an Important Factor in Phlyctenular Ophthalmia? SAMUEL THEOBALD, Baltimore.

A Study of the Effect of the Correction of Ametropia on Heterophoria with a Consideration of Some Associated Conditions. WILLIAM ZENTMAYER, Philadelphia.

Thursday, June 25—9 a. m.

Safe and Speedy Extraction of the Immature Cataractous Lens Following Preliminary Capsulotomy.
HOMER E. SMITH, Norwich, N. Y.

The Influence of Hookworm Disease on the Eyes. A Study of Fifty-Three Cases. J. W. JERVEY, Greenville, S. C.

Convergence Insufficiency. ALEXANDER DUANE, New York.

Trefoil or Stellate Keratectomy for Anterior Staphyloma.
S. LEWIS ZIEGLER, Philadelphia.

Thursday, June 25—2 p. m.

Further Observations on the Hemiopic Pupillary Reaction Obtained with a New Clinical Instrument.
CLIFFORD B. WALKER, Boston.

Experimental Researches in Methyl Alcohol Inhalation.
H. H. TYSON and M. J. SCHOENBERG, New York.

Enucleation with Transplantation of Fat into the Orbit
EDWARD STIEREN, Pittsburgh, Pa.

Demonstration of Sarcomas.
WALTER B. WEIDLER, New York.

Demonstration of the Action of Trephining on Rabbits' Eyes.
E. C. ELLETT, Memphis, Tenn.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN GUILD HALL, ASCENSION CHURCH

CHAIRMAN, BURT R. SHURLY, DETROIT; SECRETARY, FRANCIS P. EMERSON, BOSTON

Tuesday, June 23—2 p. m.

Chairman's Address: Preventive Otolaryngology.
BURT R. SHURLY, Detroit.

Chronic Focal Infection of the Nose, Mouth, Throat and Ear.
JOSEPH C. BECK, Chicago.

The Faucial Tonsil as a Gateway to General Infection.
NORTON L. WILSON, Elizabeth, N. J.

Latent and Tertiary Syphilis in Diseases of the Nose and Throat. CHARLES R. C. BORDEN, Boston.

Wednesday, June 24—9 a. m.

The Reconstruction of the Nasal Septum after the Submucous Operation. J. A. BABBITT, Philadelphia.

The Relation of Pathologic Conditions in the Nose and Throat to the Development and Treatment of Hyperthyroidism. S. P. BEEBE, New York.

The Clinical Classification of Ethmoiditis.
E. M. HOLMES, Boston.

The Pathology of Ethmoiditis.
GEORGE E. SHAMBAUGH, Chicago.

Applied Anatomy and Surgical Treatment.
HARRIS P. MOSHER, Boston.

Wednesday, June 24—2 p. m.

Hemorrhage from the Superior Petrosal Sinus as a Complication in Operations on the Lateral Sinus.
JOHN RANDOLPH PAGE, New York.

Metastatic Manifestations of Sinus Thrombosis.
SEYMOUR OPPENHEIMER, New York.

Treatment of Deafness Due to Ossicular Fixation.
PHILIP D. KERRISON, New York.

Progress in the Treatment of Otitic Meningitis.
SAMUEL J. KOPETZKY, New York.

Thursday, June 25—9 a. m.

The Indirect Method of Intralaryngeal Operation.
H. HOLBROOK CURTIS, New York.

The Direct Method of Intralaryngeal Operation.
CHEVALIER JACKSON, Pittsburgh, Pa.

The Suspension Method of Killiam.
ROSS H. SKILLERN, Philadelphia.

The Value of Radiography in the Diagnosis of Diseases of the Nose and Throat. SAMUEL IGLAUER, Cincinnati.

Laryngeal Papilloma. HARMON SMITH, New York.

Thursday, June 25—2 p. m.

The Surgical Problem in Connection with the Cranial Accessory Sinuses. JOHN F. BARNHILL, Indianapolis.

Lantern Slides of Roentgenograms of the Nasal Accessory Sinuses. LEE M. HURD, New York.

Vaccines in Otitis Media.
R. BISHOP CANFIELD, Ann Arbor, Mich.

End-Results Following the Yankauer Operation on the Eustachian Tube. JOHN L. LOUGEE, Boston.

Operations for Clefts of the Hard and Soft Palate. LINN EMERSON, Orange, N. J.

The Origin of Labyrinthine Rest-Tone. EDMUND P. FOWLER, New York.

Sonorous Vibrations in Ear-Disease LESTER M. HUBBY, New York.

The Relation of the Rhinopharynx to the Middle Ear and Mastoid. E. L. JONES, Cumberland, Md.

SECTION ON DISEASES OF CHILDREN

MEETS IN PLAY-ROOM, SEASIDE HOTEL

CHAIRMAN, F. S. CHURCHILL, CHICAGO; SECRETARY, F. R. GENGENBACH, DENVER

Tuesday, June 23—2 p. m.

Chairman's Address: The Wet-Nurse in Hospital Practice. FRANK SPOONER CHURCHILL, Chicago.

An Analysis of Cases of Infant-Feeding in Private Practice (15 minutes). C. G. KERLEY, New York.

Some Practical Breast-Milk Problems (12 minutes). A. W. MYERS, Milwaukee, Wis.

The Feeding of Skimmed Breast-Milk (15 minutes). FRANK C. NEFF, Kansas City, Mo.

Care of Delicate and Premature Children in the Home (15 minutes). H. M. MCCLANAHAN, Omaha.

Differential Diagnosis of Pyloric Stenosis (15 minutes). P. V. K. JOHNSON, Los Angeles.

Wednesday, June 24—9 a. m.

Refractory or So-Called "Fast" Cases of Meningococcus Meningitis (15 minutes). HENRY HEIMAN, New York.

Urinary Analysis in the Diagnosis and Treatment of Diseases of Infancy and Childhood (15 minutes). ROWLAND GODFREY FREEMAN, New York.

Amebic Dysentery in Children (15 minutes). L. R. DEBUYS, New Orleans.

Further Observations Continuing the Relation of Heat to Infant Mortality (15 minutes). HENRY F. HELMHOLZ, Chicago.

Further Investigation of the Bacillus Abortus Infection in Children (15 minutes). J. P. SEDGWICK, Minneapolis.

Wednesday, June 24—2 p. m.

The Use of Boiled Milk in Infant-Feeding (15 minutes). ROGER H. DENNETT, New York.

Experiences with "Whey-Modified Milk" in Infant-Feeding (15 minutes). JEROME S. LEOPOLD, New York.

Experiments with Swine Fat in Infant-Feeding (15 minutes). JOHN ZAHORSKY, St. Louis.

The Absorption of Fat from the Intestinal Tract of the Actively Tuberculous Child (15 minutes). FREDERICK W. SCHLUTZ, Minneapolis.

The Influence of Starch on Infant Digestion (15 minutes). THOMAS S. SOUTHWORTH, New York.

The Metabolism of Carbohydrates with Special Reference to Its Effect on the Absorption of Fat and Nitrogen and on the Retention of Salts (15 minutes). F. B. TALBOT and LEWIS W. HILL, Boston.

Blood-Pressure in Normal Infants (15 minutes). C. F. JUDSON, Philadelphia.

A Study of the Blood-Pressure in Anemia in Infancy (15 minutes). JOHN LOVETT MORSE and EDWIN T. WYMAN, Boston.

Some Case Studies in the Purpuras of Childhood (15 minutes). I. A. ABT, Chicago.

Thursday, June 25—9 a. m.

Treatment of Inguinal Hernia in Infants (15 minutes). F. X. WALLS, Chicago.

A Further Clinical Study of the Efficiency of Sodium Chlorid in the Therapeutics of Bright's Disease (15 minutes). H. LOWENBURG, Philadelphia.

Diagnosis and Treatment of the Late Type of Hereditary Syphilis (15 minutes). B. S. VEEDER, St. Louis.

Thursday, June 25—2 p. m.

The Relation of Bovine Tuberculosis to Early Tuberculosis in Childhood (15 minutes). T. C. MCCLEAVE, Berkeley, Cal.

Thoracic Complications of Rickets (15 minutes). J. HOWLAND and E. A. PARKS, Baltimore.

The Clinical and Pathologic Study of Hydrocephalus (15 minutes). KENNETH D. BLACKFAN and W. E. DANDY, Baltimore.

The Examination of the Chest in Children (15 minutes). RICHARD M. SMITH, Boston, and CLIFFORD D. SWEET, Fresno, Cal.

Investigation of the Diagnostic Value of Spinal Percussion and Auscultation (15 minutes). LANGLEY PORTER, San Francisco.

Fragilitas Ossium (15 minutes). MAURICE OSTHEIMER, Philadelphia.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN GYMNASIUM, GRAMMAR SCHOOL

CHAIRMAN, JOHN F. ANDERSON, WASHINGTON, D. C.; SECRETARY, M. I. WILBERT, WASHINGTON, D. C.

Tuesday, June 23—2 p. m.

Chairman's Address. JOHN F. ANDERSON, Washington, D. C.

Studies on the Absorption of Drugs. ROBERT A. HATCHER and CARY EGGLESTON, New York.

Enteroclysis, Hypodermoclysis and Intravenous Injection. LAWRENCE LITCHFIELD, Pittsburgh, Pa.

The Therapeusis of Pericarditis. RAY L. WILBUR, Palo Alto, Cal.

Therapy of Cardiovascular Disturbances. L. H. NEWBURGH, Boston.

Studies in Diabetes. A. I. RINGER, Philadelphia.

The Effects of Vapor Baths on the Total Non-Coagulable Nitrogen of the Blood in Nephritis. J. H. AUSTIN and T. G. MILLER, Philadelphia.

Wednesday, June 24—9 a. m.

SYMPOSIUM ON SPECIFIC AND PROTECTIVE FERMENTS

JOINT MEETING WITH SECTION ON PATHOLOGY AND PHYSIOLOGY AND SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

(For titles and authors of papers to be presented, see program of Section on Obstetrics, Gynecology and Abdominal Surgery.)

Wednesday, June 24—2 p. m.

SYMPOSIUM ON THE USE OF THE ROENTGEN RAY AND RADIUM IN THERAPY

The Place of the Roentgen Ray in Therapeutics. GEORGE C. JOHNSTON, Pittsburgh, Pa.

Radium and Roentgen Rays in Radiotherapy: Their Use and Limitations. WILLIAM S. NEWCOMET, Philadelphia.

SYMPOSIUM ON THE USE OF DRUGS IN SURGICAL PRACTICE

Preparation of Patients for Operation. A. D. WHITING, Philadelphia.

Postoperative Treatment of Surgical Cases. GEORGE P. MÜLLER, Philadelphia.

The Medical Treatment of Chronic Intestinal Stasis. W. A. BASTEDO, New York.

An Examination of Some Commercial Preparations of Pituitary Extract Made from the Posterior Lobe of the Pituitary Body
GEORGE B. ROTH, Washington, D. C.

Thursday, June 25—9 a. m.

SYMPOSIUM ON THE PREVENTION AND TREATMENT OF DIPHTHERIA

Active Immunization in Diphtheria by Toxin-Antitoxin Mixtures. WILLIAM H. PARK, New York.

Diphtheria Antitoxin. SAMUEL S. WOODY, Philadelphia.

SYMPOSIUM ON DIET IN TYPHOID FEVER

Diet in Typhoid Fever. LEWELLYS F. BARKER, Baltimore.

The Effects of Food on Metabolism in Typhoid Fever.
WARREN COLEMAN, New York.

Dietetic Limitations in Typhoid Fever.
DAVID L. EDSALL, Boston.

The Value of Salicylates in Acute Articular Rheumatism.
JOSEPH L. MILLER, Chicago.

The Pharmacology of Sodium Tartrate.
WILLIAM SALANT, Washington, D. C.

Thursday, June 25—2 p. m.

JOINT MEETING WITH SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON HOOKWORM DISEASE

Etiology and Treatment of Hookworm Disease.
C. WARDELL STILES, Washington, D. C.

Treatment of Hookworm Disease.
A. T. MCCORMACK, Bowling Green, Ky.

SYMPOSIUM ON PELLAGRA

Pellagra. C. H. LAVINDER, Savannah, Ga.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN PLAY-ROOM, HOTEL DENNIS

CHAIRMAN, WILLIAM OPHÜLS, SAN FRANCISCO; SECRETARY, A. J. CARLSON, CHICAGO

Tuesday, June 23—2 p. m.

Chairman's Address: Anatomic Structure and Function.
W. OPHÜLS, San Francisco.

Experimental Chronic Gastric Ulcer.
J. C. FRIEDMAN and W. W. HAMBURGER, Chicago.

Studies on Duodenal Obstruction. J. W. DRAPER, New York.

Roentgenographic Studies of the Function of the Ileocolic Valve. J. T. CASE, Battle Creek, Mich.

Studies in Experimental Diabetes.
F. M. ALLEN, San Diego, Cal.

Blood-Transfusion in Pancreatic Diabetes.
A. J. CARLSON, Chicago.

Wednesday, June 24—9 a. m.

SYMPOSIUM ON NUTRITION

JOINT MEETING WITH SECTION ON PRACTICE OF MEDICINE

(For titles and authors of papers to be presented see program of Section on Practice of Medicine.)

Wednesday, June 24—2 p. m.

SYMPOSIUM ON SPECIFIC AND PROTECTIVE ENZYMES

JOINT MEETING WITH SECTIONS ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY AND PHARMACOLOGY AND THERAPEUTICS

(For titles and authors of papers to be presented see program of Section on Obstetrics, Gynecology and Abdominal Surgery.)

Thursday, June 25—9 a. m.

Relation of Diet to Cancer. L. D. BULKLEY, New York.

The Influence of Heredity on the Incidence of Cancer in Mice. MAUDE SLYE, Chicago.

Abderhalden's Test in the Diagnosis of Cancer.
C. F. BALL, Rutland, Vt.

A Study of the Ferment Activity of the Blood-Serum during Pregnancy and under Normal and Pathologic Conditions by the Abderhalden Method.
F. H. FALLS and C. S. BACON, Chicago.

Adenomyoma of the Rectovaginal Septum.
D. S. D. JESSUP, New York.

Carcinoma of the Prostate.
B. F. MCGRATH, Rochester, Minn.

The Pineal Gland in Relation to Somatic, Sexual and Mental Development. C. P. MCCORD, Detroit.

Thursday, June 25—2 p. m.

Immunity in Tuberculosis.
G. B. WEBB and G. B. GILBERT, Colorado Springs, Colo.

The Selective Bactericidal Action of Gentian Violet.
J. W. CHURCHMAN, New Haven, Conn.

The Hectic-Weinberg Complement-Fixation Test as a Control over the Wassermann.
R. B. H. GRADWOHL, St. Louis.

The Pathologic Physiology of Arteriosclerosis.
L. F. BISHOP, New York.

Urea and Quinin Injection in Goiter.
L. F. WATSON, Oklahoma City.

The Parathyroid Glands. D. MARINE, Cleveland.

SECTION ON STOMATOLOGY

MEETS IN CRAIG HALL

CHAIRMAN, WILLIAM C. FISHER, NEW YORK; SECRETARY, EUGENE S. TALBOT, CHICAGO

Tuesday, June 23—2 p. m.

Chairman's Address. WILLIAM C. FISHER, New York.

The Section of Stomatology as a Factor in the Evolution of Dental and Medical Science.
GEORGE V. I. BROWN, Milwaukee.

Mesothelial Tumors of the Jaw.
ROBERT H. IVY, Philadelphia.

Cystic Tumors of the Jaw. GORDEN NEW, Rochester, Minn.

Differential Diagnosis of Major Mouth Lesions.
STEWART L. MCCURDY, Pittsburgh, Pa.

Methods of Obtaining Dental Service in Hospitals by the Appointment of Interns.
HERBERT L. WHEELER, New York.

Thursday, June 25—9:30 a. m.

The Scientific Routine of Tooth-Brushing and Mouth-Cleaning. JOSEPH HEAD, Philadelphia.

Osteoplastic Surgery of the Face.
WAYNE W. BABCOCK, Philadelphia.

Fracture of the Inferior Maxilla.
HENRY S. DUNNING, New York.

Bacteriology of Alveolar Abscess.
THOMAS GILMER, Chicago.

Acute Parenchymatous Glossitis. VIRGIL LOEB, St. Louis.

Thursday, June 25—2 p. m.

The Peridental Membrane as a Source of Infection.
DANIEL H. SQUIRE, Buffalo, N. Y.

Mouth Infection in Relation to Nervous Affection.
C. B. CRAIG, New York

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN BRIGHTON CASINO

CHAIRMAN, W. W. GRAVES, ST. LOUIS; SECRETARY, GEORGE A. MOLEEN, DENVER

Tuesday, June 23—2 p. m.

Chairman's Address: Some Factors Tending toward Adequate Instruction in Nervous and Mental Diseases. W. W. GRAVES, St. Louis.

Juvenile Psychosis: Report of a Case. H. H. DRYSDALE, Cleveland.

Tuberous Sclerosis and Other Unusual Features in Epilepsy. N. S. YAWGER, Philadelphia.

Nervous and Mental Disturbances Following Castration in Women. ALFRED GORDON, Philadelphia.

Acute Myelitis, Secondary to Perirectal Abscess, Developing a Few Hours after Severe Fright. WILLIAM G. SPILLER, Philadelphia.

Wednesday, June 24—9 a. m.

Occlusion of the Posterior-Inferior Cerebellar Artery: Report of Cases. A. C. GILLIS, Baltimore.

Cerebellar Symptoms and Localization. Illustrated by Lantern-Slides and Moving Pictures. CHARLES K. MILLS and T. H. WEISENBURG, Philadelphia.

Results Following Seventy-Five Injections of Salvarsanized Serum. C. EUGENE RIGGS and ERNEST M. HAMMES, St. Paul, Minn.

A Brief Report on Cases of Paresis Treated by Intraspinal Injections of Salvarsanized Serum. L. B. PILSBURY, Lincoln, Neb.

The Value of Early Diagnosis in Syphilis of the Central Nervous System: Its Relation to Treatment. HENRY A. COTTON, Trenton, N. J.

Wednesday, June 24—2 p. m.

The Borders of the Areas of Anesthesia, Analgesia and Thermo-Anesthesia in Lesions at the Different Levels of the Sensory Tract. OTFRID FOERSTER, Breslau, Germany.

Ankylosis of the Shoulder-Joint in Association with Brachial Neuritis and Pulmonary Lesion of the Right Lung. D. J. MCCARTHY, Philadelphia.

Tumors of the Crus. JOHN H. W. RHEIN, Philadelphia.

Landry's Paralysis. Report of a Case with Necropsy. EDWARD D. FISHER, New York.

Thursday, June 25—9 a. m.

SYMPOSIUM ON THE PROBLEM OF THE PREVENTION OF NERVOUS AND MENTAL DISEASE

A Brief Summary and Analysis of the Work Done by Psychanalysts, with Reference to the Diagnosis and Treatment of the Psychoses. JAMES J. PUTNAM, Boston.

First Signs in Childhood of Compulsion Neuroses. SMITH ELY JELLIFFE, New York.

The Diagnosis of Preinsane Temperaments During School Examinations. E. B. HOAG, Los Angeles.

Genetic Factors in One Hundred Cases of Psychoneuroses. DONALD GREGG, Brookline, Mass.

The "Not Insane" and "Voluntary" Admissions to the Psychopathic Hospital, Boston. E. E. SOUTHARD, Boston.

Present Teaching of Psychiatry in American Medical Schools. ROSS MOORE, Los Angeles.

The Ideal Course in Psychiatry for Medical Schools. H. DOUGLAS SINGER, Hospital, Ill.

Thursday, June 25—2 p. m.

Some Experiences with Alcohol Injection in Trigeminal and Other Neuralgias. WILFRED HARRIS, London, England.

Results of Psychanalytic Therapy in Dementia Praecox. A. A. BRILL, New York.

Kraepelin's Conception of Paraphrenia. MORRIS J. KARPAS, New York.

The Use of Celluloid Splints in the Treatment of Diseases of the Nervous System. G. WILSE ROBINSON, Kansas City, Mo.

Subarachnoid Hemorrhage: A Contribution to the Subject of Spontaneous Hemorrhage. S. LEOPOLD, Philadelphia.

Acute Disseminated Sclerosis and Its Visual Symptoms. ROBERT FOSTER KENNEDY, New York.

A Case of Myasthenia Gravis. CHARLES A. MCKENDREE, Cromwell, Conn.

Mental Disease and the Transportation of Psychopathic Patients. PHILIP COOMBS KNAPP, Boston.

SECTION ON DERMATOLOGY

MEETS IN SEASIDE HOTEL

CHAIRMAN, RICHARD L. SUTTON, KANSAS CITY, MO.; SECRETARY, HOWARD FOX, NEW YORK

Tuesday, June 23—2 p. m.

Chairman's Address: The Future of Dermatology in America. RICHARD L. SUTTON, Kansas City, Mo.

Granuloma Annulare, with a Report of Four Cases, M. B. HARTZELL, Philadelphia.

The Necessity for the Establishment of a National Leprosarium. W. C. RUCKER, Washington, D. C.

The National Care of Leprosy. ISADORE DYER, New Orleans.

A New Method of Treatment of Lupus Vulgaris. M. L. HEIDINGSFELD, Cincinnati.

The Desiccation Treatment of Congenital and New Growths of the Skin and Mucous Membranes. A Lantern Demonstration. WILLIAM CLARK, Philadelphia.

Wednesday, June 24—9 a. m.

A Few Practical Points on the Treatment of Leg Ulcers. A. RAVOGLI, Cincinnati.

Unusual Types of Diphtheria of the Skin. Report of Two Cases. FRANK CROZER KNOWLES, Philadelphia.

The Diseases and New Growths of the Skin of Lymphatic Origin. G. ARNDT, Berlin.

Summary of Research Studies in Psoriasis. JAY F. SCHAMBERG, R. W. RAITISS and JOHN A. KOLMER, Philadelphia.

Further Experiences with Intravenous Autoserum Injections in the Treatment of Inveterate Skin Diseases. WILLIAM S. GOTTHEIL and DAVID I. SATENSTEIN, New York.

The Use of Salvarsan in Non-Syphilitic Diseases. WILLIAM H. BEST, Brooklyn.

Wednesday, June 24—2 p. m.

A Statistical Study of Syphilis. The Relation of Its Symptoms to Subsequent Tabes Dorsalis or General Paralysis. CHARLES J. WHITE, Boston.

Syphilis in the American Negro. H. H. HAZEN, Washington, D. C.

Observations on Strains of the Pallida Group of Spirochetes. HENRY J. NICHOLS, Washington, D. C.

A Sero-Enzyme Test for Syphilis. F. W. BAESLACK, Detroit.

The Treatment of Syphilis of the Nervous System. JOHN A. FORDYCE, New York.

The Treatment of Syphilis of the Nervous System by Intradural Injections of Neosalvarsan. UDO J. WILE, Ann Arbor, Mich

Cerebrospinal Examinations in "Cured" Syphilis in Which the Biologic Method Has Been Used as a Control.
B. C. CORBUS, Chicago.

The Intravenous Administration of Mercury in Syphilis.
JEROME KINGSBURY and PAUL E. BECHET, New York.

Thursday, June 25—9 a. m.

Association of Erythema Nodosum and Tuberculosis.
O. H. FOERSTER, Milwaukee, Wis.

Pemphigoid in the New-Born (Pemphigus Neonatorum) with Report of an Epidemic.
H. N. COLE and H. O. RUH, Cleveland.

Radium: Its Use and Limitations in Skin-Diseases.
FRANK E. SIMPSON, Chicago.

An Unusual Case of Bromoderma of the Legs.
LUDWIG WEISS, New York.

A Case of White-Spot Disease Occurring on the Penis and Scrotum.
GEORGE M. MACKEE and FRED WISE, New York.

Sarcoid of Boeck. S. E. SWEITZER, Minneapolis.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN ST. PAUL'S CHURCH

CHAIRMAN, M. P. RAVENEL, MADISON, WIS.; SECRETARY, C. HAMPSON JONES, BALTIMORE

Tuesday, June 23—2 p. m.

Chairman's Address and Oration: The Education of Health Officers. M. P. RAVENEL, Madison, Wis.

Report of Committee on Poverty.
W. A. EVANS, Chicago; PAULINE M. TOWNSEND-HANSON, Marshalltown, Iowa; MARY LAWSON NEFF, Fairfield, Iowa; J. N. HURTY, Indianapolis; S. C. KNOPF, New York.

Report of Committee on Cerebrospinal Meningitis.
R. Q. LILLARD, Nashville, Tenn.; JAMES A. HAYNE, Columbia, S. C.; R. H. VON EZDORF, Mobile, Ala.

Wednesday, June 24—9 a. m.

Present-Day Public-Health Activities.
FRANCIS E. FRONCZAK, Buffalo, N. Y.

The Importance of Proper Sanitary Measures in the Preparation of Foodstuffs.
M. CLAYTON THRUSH, Philadelphia.

Criticism of an Attempt to Prove that a Public-Health Laboratory May Distribute Infection.
JOHN S. FULTON, Baltimore.

Some Important Phases of Railway Sanitation.
N. E. CAMPBELL, Chicago.

Wednesday, June 24—2 p. m.

Principles of State Control of Tuberculosis with Special Reference to Pennsylvania's System.
ALBERT P. FRANCINE, Philadelphia.

Enemies of the Consumptive. C. AM ENDE, New York.

The Prevention of Tuberculosis by Periodic Examinations of Schoolchildren. MARY E. LAPHAM, Highlands, N. C.

Certain Problems in Infant Mortality.
C. J. HUNT, Harrisburg, Pa.

Thursday, June 25—9 a. m.

County Health Organizations in the United States.
LOUIS I. DUBLIN, New York.

School-Spread of Contagious Diseases and How to Control It. MYER SOLIS-COHEN, Philadelphia.

Thursday, June 25—2 p. m.

SYMPOSIUMS ON PELLAGRA AND HOOKWORM

JOINT MEETING WITH SECTION ON PHARMACOLOGY AND THERAPEUTICS

(For titles and authors of papers to be presented see program of Section on Pharmacology and Therapeutics.)

SECTION ON GENITO-URINARY DISEASES

MEETS IN ST. PAUL'S CHURCH

CHAIRMAN, ARTHUR L. CHUTE, BOSTON; SECRETARY, LOUIS E. SCHMIDT, CHICAGO

Tuesday, June 23—2 p. m.

The Value of Hydrotherapy in Urologic Cases.
W. F. MARTIN, Battle Creek, Mich.

Transplantation of Fat in Genito-Urinary Surgery.
GUSTAV KOLISCHER, Chicago.

The Ultimate Results of Genital Tuberculosis in the Male.
J. DELLINGER BARNEY, Boston.

The Diagnosis and Treatment of Gonorrhea.
C. C. WARDEN, Los Angeles.

Endoscopic Treatment of Nocturnal Emissions.
ALEXANDER RANDALL, Philadelphia.

The Radical Removal of Certain Types of Diseased Verumontanum with Notes on Their Pathology.
A. G. RYTINA, Baltimore.

The Colliculus Seminalis as a Factor in Chronic Diseases of the Urethra. A. L. WOLBARST, New York.

Wednesday, June 24—9 a. m.

Operative Treatment of Infections of the Seminal Duct.
WILLIAM T. BELFIELD, Chicago.

Permanent Epididymotomy. V. LESPINASSE, Chicago.

The Treatment of Hydrocele with Special Reference to Phenol Injections. R. H. HERBST, Chicago.

Malignant Disease of the Testes and Its Operative Treatment. FRANK HINMAN, Baltimore.

A Method of Controlling Hemorrhage after Suprapubic Removal of the Hypertrophied Prostate.
E. L. KEYES, JR., New York.

The Rôle of Functional Kidney Tests and the Preoperative and Postoperative Treatment in the Reduction of Prostatectomy Mortality. B. A. THOMAS, Philadelphia.

Some Unusual Urologic Conditions and Their Surgical Features. HUGH H. YOUNG, Baltimore.

Suprapubic Prostatectomy.
CHARLES E. BARNETT, Fort Wayne, Ind.

Wednesday, June 24—2 p. m.

Chairman's Address. ARTHUR L. CHUTE, Boston.

Extraperineal Rupture of the Bladder. Its Surgical Management. E. FULLER, New York.

Surgery of the Bladder. J. BENTLEY SQUIER, New York.

Diverticula of the Urinary Bladder with Report of Cases.
WILLIAM E. LOWER, Cleveland.

Influence of Collargol Injections on the Kidney.
D. N. EISENDRATH, Chicago.

Renal Infection; a Further Experimental Study of Its Relations to Impaired Ureteric Function.
WILLIAM H. BARBER and J. W. DRAPER, New York.

Observations on Renal Functions Determined by Ureteral Catheterization and Phenolsulphonephthalein Test.
GEORGE G. SMITH, Boston.

Thursday, June 25—9 a. m.

A Study of the Action of the Colon Bacillus on the Kidney.
I. S. KOLL, Chicago.

The Treatment of Pyelitis. JOHN GERAGHTY, Baltimore.

Continuous Painless Renal Hemorrhage and Its Treatment.
WILLIAM M. SPITZER, Denver.

The Value of Renal Functional Tests in Surgical Conditions of the Urinary Tract.
W. F. BRAASCH and G. J. THOMAS, Rochester, Minn.

Differential Diagnosis of Nephrolithiasis and Renal Tuberculosis by Roentgenography.
M. KROTOSZYNER, San Francisco.

Thursday, June 25—2 p. m.

Surgical Interference in Nephritis. L. E. SCHMIDT, Chicago.
Acute Unilateral Hematogenous Infection of the Kidney. JOHN H. CUNNINGHAM, JR., Boston.
Hemic Infection of the Kidney. GRANVILLE MACGOWAN, Los Angeles.

SECTION ON HOSPITALS

MEETS IN THE MARLBOROUGH-BLENHEIM HOTEL

CHAIRMAN, L. B. BALDWIN, MINNEAPOLIS; SECRETARY, JOHN A. HORNSBY, CHICAGO

Tuesday, June 23—2 p. m.

Chairman's Address. L. B. BALDWIN, Minneapolis.

SYMPOSIUM ON HOSPITAL CARE OF COMMUNICABLE DISEASES

The Care of Communicable Diseases in General Hospital. ROBERT J. WILSON, New York.
Administrative Technic in the Special Communicable Disease Hospital. D. L. RICHARDSON, Providence, R. I.
Communicable Diseases as a Public-Health Problem. J. W. KERR, Washington, D. C.

Wednesday, June 24—9 a. m.

SYMPOSIUM ON PHYSICAL THERAPY IN THE MODERN HOSPITAL

Physical Therapy in Its Relation to the Hospital Patient from the Point of View of the Internist. WALTER L. BIERRING, Des Moines, Iowa.
Six Years' Experiences in the Medicomechanical Department of the Massachusetts General Hospital. C. HERMAN BUCHOLZ, Boston.
Applied Physical Therapy. PETER J. PEEL, Chicago.

Wednesday, June 24—2 p. m.

Hospital Preparation for Successful Surgery. THOMAS A. SHALLON, Philadelphia.
Principles of Clinical Organization. H. S. PLUMMER, Rochester, Minn.
Report of the Committee on Hospital Abuses of Charity. JOSEPH D. FARRAR, Philadelphia.

Thursday, June 25—9 a. m.

Election of Officers.

SYMPOSIUM ON AIR PROBLEMS IN HOSPITALS

Tests of Ventilating Plants. E. H. BASS, Minnesota.
Air Examination in Hospitals. C. E. A. WINSLOW, New York.
Hospital Experiments with Air. W. A. SMITH, Baltimore.
Possibilities of Window Ventilation. S. S. GOLDWATER, New York.
Possibilities of Mechanical Ventilation. ARTHUR K. OHMES, New York.
Comparisons of Old and New Hospitals. T. J. VAN DER BRENT, New York.

Thursday, June 25—2 p. m.

SYMPOSIUM ON SURGICAL SERVICE IN THE HOSPITAL

JOINT MEETING WITH SECTION ON SURGERY IN MORRIS GUARDS' HALL

(For titles and authors of papers to be presented, see program of Section on Surgery.)

SECTION ON ORTHOPEDIC SURGERY

MEETS IN G. A. R. HALL

CHAIRMAN, LEONARD W. ELY, SAN FRANCISCO; SECRETARY, EMIL S. GEIST, MINNEAPOLIS

Tuesday, June 23—2 p. m.

Chairman's Address: Orthopedic Surgery: Its Scope and Its Future. LEONARD W. ELY, San Fancisco.
Some Remarks on the Etiology and Pathology of Bone and Joint Tuberculosis. JOHN FRASER, Edinburgh, Scotland.
The Orthopedist and the Treatment of Chronic Diseases. J. E. GOLDTHWAIT, Boston.
Ankylosis: An Experimental Study. NATHANIEL ALLISON, St. Louis.
Arthroplasty with the Aid of Animal Membrane. W. S. BAER, Baltimore.
Arthroplasty of the Elbow-Joint. W. RUSSELL MACAUSLAND, Boston.

Wednesday, June 24—9 a. m.

A Neglected Type of Ankle-Fracture. F. J. COTTON, Boston.
The Three Cardinal Signs in the Diagnosis of Fractures Into or Near Joints. W. G. STERN, Cleveland.
The Treatment of Fractures of Both Bones of the Legs. FRANK E. PECKHAM, Providence, R. I.
Necrotic Bone and the Subsequent Changes Which It Undergoes. D. B. PHEMISTER, Chicago.
Results of Operative Procedures in Resection of the Knee. M. S. HENDERSON, Rochester, Minn.
The Sacro-Iliac and Sacrovertebral Articulations. C. A. ERDMAN, Minneapolis.

Wednesday, June 24—2 p. m.

Coxa Vara. JOHN RIDLON, Chicago.
Coxa Vara Adolescentium. ARTHUR STEINDLER, Des Moines, Iowa.
Scoliosis. E. G. ABBOTT, Portland, Me.
Congenital Scoliosis; with Specimen Including the Thorax. H. B. THOMAS, Chicago.
The Relation of Bony Anomalies of the Lumbar and Sacral Spine to the Cause and Treatment of Scoliosis. Z. B. ADAMS, Boston.
Bone and Joint Cases; with Lantern-Slide and Moving-Picture Illustrations. MICHAEL HOKE and FREDERICK HODGSON, Atlanta.
Moving Pictures of Deformities in Children. JAMES K. YOUNG, Philadelphia.

Thursday, June 25—9 a. m.

Original Use of the Bone-Graft in Pott's Disease, Fractures and Other Conditions. FRED H. ALBEE, New York.
Hibbs' Osteoplastic Operation for Pott's Disease of the Spine. Results of Clinical Observations and Animal Experimentation. B. P. FARRELL, New York.
Recurrent Spondylolisthesis with Paralysis. Bone-Splint Transplantation; Recovery. F. EDWIN W. RYERSON, Chicago.
Use of Transplant from Tibia as a Unit of a Joint. JOHN F. GOLDEN, Chicago.
Observations on Bone Transplantation (Albee's Method) for the Cure of Pott's Disease. CHARLES M. JACOBS, Chicago.

Thursday, June 25—2 p. m.

The Psychic Element Manifested in Many Cases of Orthopedic Surgery. B. E. MCKENZIE, Toronto.
The Relation of Posture and Intestinal Derangements to Coxitis. ROBERT B. OSGOOD, Boston.
Mechanics and Pathology of the Hip in Their Relation to the Diagnosis and Treatment of Diseases of the Hip-Joint. P. W. NATHAN, New York.
Syphilitic Arthritis; the Question of Diagnosis. ARCHER O'REILLY, St. Louis.
Syphilis of the Knee-Joint. JOHN L. PORTER, Chicago.
Syphilitic Bone and Joint Conditions. HENRY W. FRAUENTHAL, New York.

THE SCIENTIFIC EXHIBIT

Demonstration of the Results of Research Which Promise to Be of Great Interest

The flattering prospects for the Scientific Exhibit show healthful evolution along certain lines. Realization is now being achieved of the appeal so often made for research workers to present the fruits of their investigations as exhibits which they can demonstrate systematically. The fact has finally dawned on them that the Scientific Exhibit offers an extraordinary opportunity; and the general membership gains a variety from the conventional program which is refreshing and profitable. It keeps research workers in touch with one another and gives the practitioner an insight into the most advanced factors in medical progress. Representing the evolutionary progress of the Scientific Exhibit, there will be demonstrated at the Atlantic City session no less than a dozen research exhibits of great interest.

Among the subjects illuminated by exhibits, none will receive greater emphasis than the cancer problem. Both to the public and to the professional mind this topic appeals more strongly than any other. It is particularly appropriate, therefore, that a series of exhibits showing all the late things in cancer research will be presented, chiefly under the auspices of the American Association for Cancer Research. This will include, besides the results of animal experimentation, demonstrations relating to radium and its derivatives, showing methods of preparation and application.

Some striking exhibits will show the experimental production in animals of erythema nodosum, pneumonia, nephritis and renal infarcts from collargol injections.

A new instrument of precision in clinical study having extraordinary features will be shown for the first time. It is presented as a free-will offering from the dental to the medical profession, by a distinguished member of the former.

Roentgenography will of course occupy a prominent place. Those who contemplate participating should write to Dr. R. D. Carman of Rochester, Minn., indicating the subject and the number and size of the plates which it is desired to show.

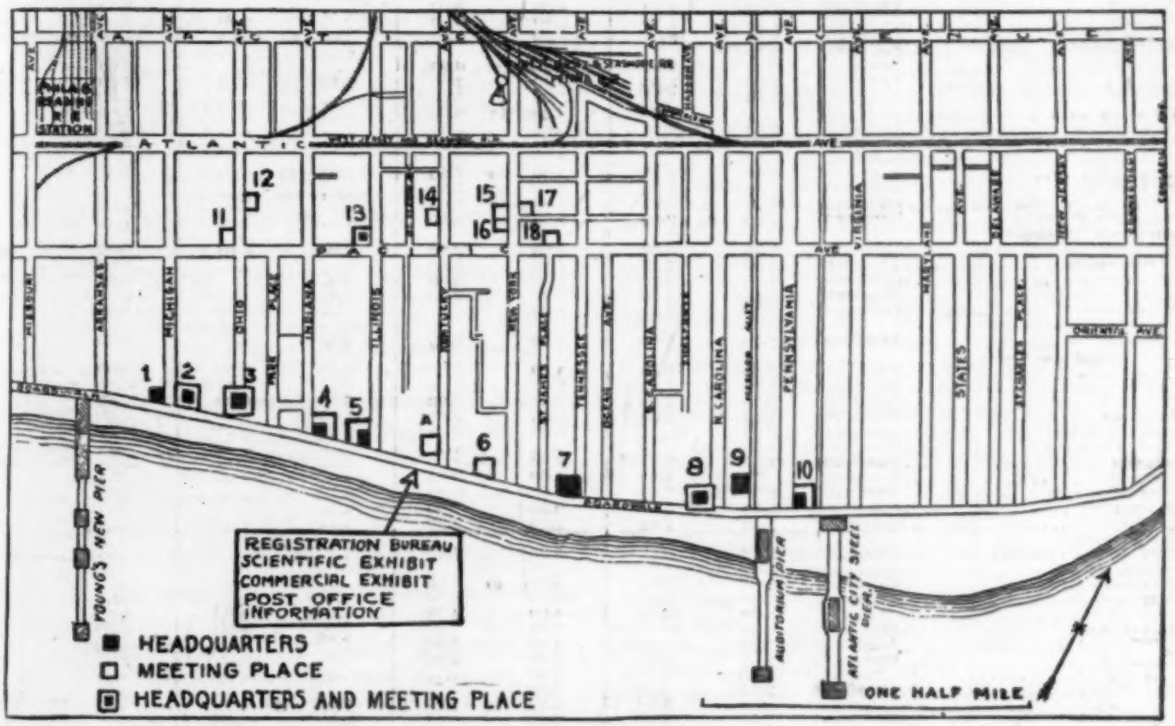
Public health progress will be shown in motion-pictures, and there will be exhibits dealing with hookworm, pellagra, cancer prevention and other new phases of public health propaganda.

In accordance with custom, a gold medal will be awarded to the best research exhibit relating to any of the fundamental branches of medicine. Not all research exhibits, however, are obliged to be entered in competition. Certificates of honor will be granted to a few of the most meritorious exhibits.

If they have not already done so, all those who contemplate participation should at once notify the director, Dr. F. B. Wynn, 311 Newton Claypool Building, Indianapolis. Statement should be made of the scope and character of what it is proposed to show and the amount and character of space desired.

Exhibits should be shipped in ample time to reach Atlantic City not later than June 20. This will enable installation by Monday and readiness for the stream of visitors early Tuesday morning. The exhibits should be addressed to Dr. Frank B. Wynn, Director Scientific Exhibit, American Medical Association, Atlantic City, N. J., care Exposition Building. The exhibitor should indicate on the box by whom sent, and write a letter to the director so that it will arrive not later than June 19, addressed in care of Dr. I. E. Leonard, Atlantic City, stating how the exhibit was shipped, whether or not it is to be opened and when he will arrive to supervise the installation of the exhibit.

ATLANTIC CITY INFORMATION



KEY TO MAP

Alamac (7)
Apollo Theater (6)
Ascension Church (14)
Brighton (4)
Chalfonte (8)
Commercial Exhibit (A)
Craig Hall (13)
Dennis (2)
Grammar School (12)
G. A. R. Hall (17)
Haddon Hall (9)
Information Bureau (A)
Marlborough-Blenheim (3)
Morris Guards Hall (15)
Odd Fellows Hall (16)
Parochial School (18)
Post Office—A. M. A. (A)
Registration Bureau (A)
St. Paul's Church (11)
Scientific Exhibit (A)
Seaside (10)
Shelburne (1)
Traymore (5)

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY ATLANTIC CITY HOTELS

Hotels Grouped by Streets	Plan	Rooms Without Private Bath				Rooms with Private Bath			
		For One Person		For Two Persons		For One Person		For Two Persons	
		Single Room	Double Room	Double Room	Extra Large Room	Single Room	Double Room	Double Room	Extra Large Room
On the Boardwalk—									
ROYAL PALACE	American	$3.50	$4.00	$7.00 to	$9.00	$5.00 to	$8.00	$10.00 to	$14.00
RUDOLF	American	3.50	4.00	7.00	8.00	5.00	6.00	9.00 to	12.00
ST. CHARLES	American	3.50	4.50	6.00 to	8.00	6.00	7.00	8.00 to	10.00
SEASIDE	American	3.50	5.00	6.00	7.00	6.00	7.00	10.00	12.00
HADDON HALL	American	3.50	5.00	6.00	8.00	6.00	7.00	10.00	14.00
CHALFONTE	American	3.50 to	4.50	6.00 to	8.00	....	6.00	10.00	12.00
ALAMAC	American	4.00	5.00	8.00 to	10.00	6.00	7.00	10.00 to	14.00
ALAMAC	European	2.00	3.00	4.00	5.00	4.00	5.00	6.00	8.00
TRAYMORE	American	4.00	6.00	8.00	9.00	6.00	13.00	10.00	16.00
BRIGHTON	American	4.50	7.00	9.00 to	16.00	7.00	9.00	11.00 to	18.00
MARLBOROUGH-BLENHEIM	American	5.00	6.00	9.00	10.00	6.00 to	12.00	10.00 to	18.00
MARLBOROUGH-BLENHEIM	European	3.00	4.00	5.00	6.00	4.00 to	10.00	6.00 to	14.00
DENNIS	American	4.00	5.00	7.00	8.00	6.00 to	9.00	10.00 to	16.00
SHELBURNE	American	5.00	6.00	10.00	12.00	7.00	8.00	12.00	15.00
SHELBURNE	European	3.00	4.00	6.00	8.00	5.00	6.00	8.00	10.00
CHELSEA	American	5.00	6.00	8.00	10.00	7.00	8.00	10.00	12.00
Pacific Avenue—									
HALL'S COTTAGE	American	2.00	2.00	4.00	4.00	....	....	....	....
HALL'S COTTAGE	European	1.00	2.00	2.00	2.00	....	....	....	....
MCGINLEY	American	2.00	3.00	3.00	4.00	....	....	....	....
MCGINLEY	European	1.00	2.00	2.00	3.00	....	....	....	....
Oriental Avenue—									
TOURAINE	American	2.50	3.00	5.00	....	4.00	5.00	7.00	8.00
Rhode Island Avenue—									
WESTMONT	American	2.50	3.00	5.00	6.00	4.00	5.00	7.00	8.00
Massachusetts Avenue—									
PHILLIPS HOUSE	American	2.50	3.50	5.00 to	8.00	....	5.00	8.00	8.00
New Jersey Avenue—									
PIERREPONT	American	3.50	4.00	7.00	8.00	4.50	5.00	9.00	10.00
MRS. LANCKEN	European	1.00	1.00	2.00	2.00	....	....	....	....
DOWLING COTTAGE	American	2.00	2.50	4.00	....	....	3.00	5.00	....
St. Charles Place —									
RALEIGH	American	3.00	....	5.00	6.00	4.00	....	7.00	8.00
Maryland Avenue—									
GOODFELLOW	American	2.00	3.00	4.00	5.00	....	3.00	5.00	....
HALCYON HALL	American	2.00	2.50	4.00	5.00	....	....	....	....
HALCYON HALL	European	1.00	1.50	2.00	3.00	....	....	....	....
LAMBORN	American	2.50	3.50	5.00	....	4.00	....	8.00	....
Virginia Avenue—									
WHITTIER	American	2.00	2.50	4.00	....	....	....	....	....
BERKSHIRE INN	American	2.00	3.00	4.00	6.00	3.00	4.00	6.00	7.00
BERKSHIRE INN	European	1.00	1.50	2.00 to	3.00	....	....	....	....
AVON INN	American	2.00	2.00	3.50	4.00	2.50	3.00	5.00	5.50
AVON INN	European	1.00	1.00	2.00	2.50	2.00	2.00	3.00	3.00
CALVERT	American	2.00	2.50	4.00	5.00	....	5.00	8.00	10.00
CALVERT	European	1.00	1.50	2.00	3.00	....	3.00	6.00	8.00
GRAND ATLANTIC	American	2.50	3.00	5.00 to	7.00	4.00 to	5.00	7.00 to	10.00
BOTHWELL	American	2.50	....	5.00	....	4.00	....	8.00	....
WILTSHIRE	American	2.50	3.00	5.00	6.00	....	....	8.00	10.00
SOTHERN	American	2.50	3.00	5.00	6.00	3.50	4.00	7.00	8.00
MORTON	American	3.00	3.50	5.00	6.00	....	....	7.00	8.00
RAYMOND	American	....	2.50	4.00 to	6.00	....	....	7.00 to	10.00
ABSECON	American	2.50	3.00	5.00	6.00	....	....	7.00	7.00
ABSECON	European	1.50	....	2.00	3.00	....	....	5.00	5.00
ALBEMARLE	American	2.50	....	4.00	....	....	....	....	....
RITA HALL	American	2.00 to	3.00	4.00 to	6.00	3.00 to	4.00	6.00 to	7.00
RITA HALL	European	1.00 to	1.50	2.00 to	3.00	....	....	....	....
WRIGHT'S CATTAGE	American	2.00 to	3.00	4.00 to	6.00	....	....	....	....
WRIGHT'S COTTAGE	European	1.00 to	2.00	2.00 to	4.00	....	....	....	....
Pennsylvania Avenue—									
MELROSE HALL	American	2.50	3.00	5.00	6.00	3.00	3.50	6.00	7.00
WYNNEFIELD	American	2.00	2.50	4.00	5.00	....	....	6.00	7.00
WYNNEFIELD	European	1.00	1.50	2.00	3.00	....	....	4.00	5.00
NEW CHATHAM	American	2.50	3.00	5.00	6.00	....	....	....	....
STEVENSON	American	2.50	3.50	5.00	....	....	3.50	6.00	....
North Carolina Avenue—									
COLONIAL	American	2.50	3.00	6.00	6.00	4.00	4.00	8.00	8.00
South Carolina Avenue—									
DIXIE	American	2.00	2.00	3.00	3.00	2.50	2.50	5.00	5.00
DIXIE	European	1.00	1.00	2.00	2.00	1.50	1.50	3.00	3.00
IROQUOIS	American	3.00	4.00	5.00	6.00	5.00	6.00	7.00	8.00
IROQUOIS	European	1.50	2.00	2.00	3.00	3.00	4.00	5.00	6.00
NEW PRINCESS	American	3.00	....	5.00	6.00	4.00	....	8.00	....
NEW PRINCESS	European	1.50	....	....	....	....	....	....	....
RADNOR	American	1.50	2.50	3.00	4.00	....	....	....	....
RADNOR	European	.75	1.50	1.50	2.00	....	....	....	....
NEW ENGLAND	American	2.50 to	3.00	5.00 to	6.00	4.00	....	7.00	....
SILVERSIDE	American	3.00	3.50	5.00	6.00	....	....	....	....
SILVERSIDE	European	1.50	2.00	2.00	3.00	....	....	....	....
Ocean Avenue—									
BON AIR	American	2.00	....	3.50	4.00	....	....	....	....
Tennessee Avenue—									
NATIONAL	European	1.00 to	2.00	2.00 to	3.00	....	....	....	....
KENWOOD	American	2.00	2.50	3.00	4.00	....	....	....	....
CONTINENTAL	American	2.00	2.50	4.00	4.00	3.50	4.00	6.00	7.00
CONTINENTAL	European	1.00	1.50	2.00	3.00	1.50	2.00	3.00	4.00
ELBERON	American	1.50	2.50	4.00	5.00	3.50	....	6.00	7.00
ELBERON	European	1.00	1.50	2.00	2.50	....	....	....	....
LOUVAN	American	2.00	2.50	4.00	....	....	....	....	....
TRACY	American	2.00	3.00	4.00	....	....	....	....	....
FREDONIA	American	2.50	3.00	4.00 to	7.00	3.50 to	7.00	5.00 to	6.00
FREDONIA	European	1.50	2.00	2.00	3.00	2.50	3.00	....	....
HOWARD	American	2.00	2.50	4.00	4.50	....	....	....	....
HOWARD	European	1.00	1.50	2.00	2.50	....	....	....	....
GREATER PITTSBURGH	American	1.75	2.00	2.50	3.00	....	....	....	....
GREATER PITTSBUEGH	European	1.00	1.25	1.50	2.00	....	....	....	....
BEAUMONT	American	2.00	2.50	3.00	4.00	....	....	....	....
BEAUMONT	European	1.00	2.00	2.00	2.50	....	....	....	....

St. James Place—													
SEA CREST	American	2.00		....	....		....	....		....	....	....	....
SEA CREST	European	1.00		....	....		....	....		....	....	....	....
FLANDERS	American	1.50		2.00	3.00		4.00	....		....	....	....	....
ELWOOD	American	2.00		2.50	4.00		5.00	....		3.50	5.00	6.00	
ELWOOD	European	1.00		1.50	2.00		3.00	....		2.00	3.00	4.00	
DEVONSHIRE	American	2.50		3.00	4.00	to	6.00	....		....	6.00	....	
ST. JAMES	American	2.00		2.50	3.50		4.00	....		....	....	....	
New York Avenue—													
VICTORIA	American	2.00		3.00	4.00		4.00	....		....	....	....	
VICTORIA	European	1.00		1.00	2.00		2.00	....		....	....	....	
MERVINE	American	2.50		3.00	5.00		6.00	....		5.00	8.00	8.00	
MERVINE	European	1.00		1.50	2.50		3.00	....		3.00	5.00	6.00	
NETHERLAND	American	2.00		2.50	4.00		4.00	3.50		....	6.00	....	
WALDORF	American	2.50		2.50	4.00		4.00	....		....	....	....	
BELLVILLE	American	1.50	to	3.00	3.00	to	6.00	....		....	....	....	
BELLVILLE	European	1.00		1.50	2.00		3.00	....		....	....	....	
NEW HYGEIA	American	1.50		1.75	2.75		3.00	....		....	....	....	
NEW HYGEIA	European	.75		1.00	1.50		1.75	....		....	....	....	
Kentucky Avenue—													
BARNAY'S	European	3.00		5.00	5.00		7.00	4.00		7.00	6.00	8.00	
NEW CLARION	American	2.00	to	3.50	4.00	to	6.00	3.00	to	4.50	5.00	....	
NEW CLARION	European	1.00		1.50	2.00		3.00	....		....	....	....	
FRONTENAC	American	2.50		2.50	4.00		5.00	....		....	....	....	
MONTICELLO	American	2.50		3.00	4.00		5.00	4.00		5.00	6.00	7.00	
MONTICELLO	European	1.50		2.00	2.00		3.00	2.50		3.50	3.50	5.00	
WESTMINSTER	American	2.00		2.50	4.00		5.00	3.00		4.00	5.00	6.00	
WESTMINSTER	European	1.00		1.50	2.00		3.00	2.00		2.50	3.00	4.00	
SILVERTON	American	1.50	to	2.50	3.00		4.00	....		....	....	....	
Illinois Avenue—													
CRAIG HALL	American	2.50		3.00	5.00		6.00	3.50		4.00	6.00	7.00	
Park Place—													
GLASLYN-CHATHAM	American	2.50		3.00	5.00		....	....		....	8.00	....	
Michigan Avenue—													
PENNHURST	American	3.00		3.00	5.00		6.00	4.00	to	5.00	7.00	8.00	
ARLINGTON	American	2.50		3.00	4.00		5.00	....		5.00	7.00	8.00	
ARLINGTON	European	1.00		1.50	2.00		3.00	....		....	....	....	
EDISON	American	2.00		2.50	3.50		4.00	2.50		3.00	5.00	5.50	
EDISON	European	1.00		1.50	2.00		2.50	1.50		2.00	3.00	3.50	
FRANCIS	American	1.50		2.00	3.00		4.00	3.50		4.00	5.00	5.50	
Arkansas Avenue—													
EMMETT	American	1.25	to	2.00	2.50		3.00	....		....	....	....	
EMMETT	European	.50	to	1.00	1.00		1.50	....		....	....	....	
Georgia Avenue—													
MILLER COTTAGE	American	1.50		2.00	3.00		3.50	....		....	....	....	

MEETING-PLACES AND HEADQUARTERS

The numerals refer to the map, p. 1607.

BOARD OF TRUSTEES: Directors' Room, Marlborough-Blenheim (3).

JUDICIAL COUNCIL: Marlborough-Blenheim (3).

HOUSE OF DELEGATES: Traymore Solarium (5).

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION: Marlborough-Blenheim (3).

GENERAL MEETING: Apollo Theater (6).

SCIENTIFIC EXHIBIT, COMMERCIAL EXHIBIT, REGISTRATION BUREAU, INFORMATION, TELEPHONES AND BRANCH POST-OFFICE: Exposition Building, Kentucky Avenue and Boardwalk (A).

SECTION, HOTEL HEADQUARTERS AND MEETING-PLACES

PRACTICE OF MEDICINE: Hotel Dennis (2)—St. Paul's Church (11).

SURGERY: Hotel Chalfonte (8)—Morris Guards' Hall (15).

OBSTETRICS AND GYNECOLOGY: Haddon Hall (9)—Morris Guards' Hall (15).

ORTHOPEDIC SURGERY: Hotel Chalfonte (8)—G. A. R. Hall (17).

OPHTHALMOLOGY: Hotel Traymore (5)—Parochial School (13)—Marlborough-Blenheim (3).

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Hotel Brighton (4)—Guild Hall, Ascension Church (14).

DISEASES OF CHILDREN: Seaside House (10)—Seaside House (10).

PHARMACOLOGY AND THERAPEUTICS: Hotel Dennis (2)—Grammar School Gymnasium (12).

PATHOLOGY AND PHYSIOLOGY: Hotel Shelburne (1)—Playroom, Hotel Dennis (2).

STOMATOLOGY: Craig Hall (13)—Craig Hall (13).

NERVOUS AND MENTAL DISEASES: Hotel Brighton (4)—Brighton Casino (4).

DERMATOLOGY: Seaside House (10)—Hotel Chalfonte (8).

PREVENTIVE MEDICINE AND PUBLIC HEALTH: Hotel Shelburne (1)—St. Paul's Church (11).

GENITO-URINARY DISEASES: Hotel Alamac (7)—Odd Fellows Hall (16).

HOSPITALS: Marlborough-Blenheim (3)—Marlborough-Blenheim (3).

LOCAL COMMITTEE ON ARRANGEMENTS

William Edgar Darnall, Chairman, 1704 Pacific Avenue.
E. C. Chew, Treasurer. Henry T. Harvey, Secretary.

SUBCOMMITTEES

COMMITTEE ON FINANCE

George Scott, 1109 Pacific Avenue, Chairman.

COMMITTEE ON ENTERTAINMENT

William J. Carrington, 905 Pacific Avenue, Chairman.

COMMITTEE ON SECTION ENTERTAINMENT

W. E. Jonah, 1616 Pacific Avenue, Chairman.

COMMITTEE ON HOTELS

Thomas D. Taggart, 25 South Indiana Avenue, Chairman.

COMMITTEE ON HALLS AND MEETING-PLACES

Walt P. Conaway, 1723 Pacific Avenue, Chairman.

COMMITTEE ON SECTION MEETINGS

Byron G. Davis, 1512 Pacific Avenue, Chairman.

COMMITTEE ON PROGRAMS

C. Coulter Charlton, 114 South Illinois Avenue, Chairman.

COMMITTEE ON PRINTING

Walter Reynolds, 27 South Indiana Avenue, Chairman.

COMMITTEE ON BADGES

E. H. Harvey, 20 North Florida Avenue, Chairman.

COMMITTEE ON SCIENTIFIC EXHIBIT

I. E. Leonard, 2842 Atlantic Avenue, Chairman.

COMMITTEE ON REGISTRATION

William Martin, 36 S. North Carolina Avenue, Chairman.

COMMITTEE ON INFORMATION

Richard Bew, 1217 Pacific Avenue, Chairman.

COMMITTEE ON ALUMNI ENTERTAINMENTS

Joseph C. Marshall, 1517 Pacific Avenue, Chairman.

COMMITTEE ON POST-OFFICE AND TELEPHONES

C. Garrabrandt, 19 North Pennsylvania Avenue, Chairman.

COMMITTEE ON COMMERCIAL EXHIBIT

E. Guion, 34 S. North Carolina Avenue, Chairman.

LADIES' COMMITTEE

Mrs. E. H. Harvey, 20 North Florida Avenue, Chairman.

REGISTRATION

The Importance of Registering Early—A Few Instructions Given

The Bureau of Registration will be located in the Exposition Building, Kentucky Avenue and Boardwalk. A committee of local physicians will assist members in registration.

A branch post-office will be opened and a Bureau of Information established in connection with the Registration Bureau.

Members must register in order to obtain the official badge and program. The badge will be necessary for admission to entertainments. All are urged to register as soon as they can name their hotels.

The Registration Department will be open from 8:30 a. m. to 5:30 p. m., on Monday, Tuesday, Wednesday and Thurs-

day, June 22, 23, 24 and 25, and from 9 to 10 a. m. on Friday, June 26.

Attention is called to the following directions:

1. Each physician desiring to register will first fill out the registration card. One should write very plainly, or print, as the cards are given to the printer to use as "copy" for putting the names in the daily *Bulletin*.

2. *Each Fellow who has paid his annual dues* in full will present his pocket card (which was sent him from the Chicago office) and his filled-out registration card at a window marked "Registration by Pocket Card."

3. A delay, in order that the records may be consulted, always inconveniences those who have paid their dues but who fail to present their pocket cards, as suggested above. Be sure to bring your "pocket card."

4. *Fellows who have not paid* their dues will present registration card and make payment at a window marked "Cash."

5. *Each applicant for Fellowship* will present his registration card at the window marked "New Fellows," with a certificate of membership in his state society. Prospective Fellows, however, will save delay and annoyance by sending in their applications before the session. All such applications should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago, so as to arrive not later than June 10.

6. Each Fellow on registering will receive a badge, a copy of the Official Program containing a full announcement of the scientific proceedings, invitations to the social functions, and such other notices as may be of interest.

PUBLIC HEALTH SUNDAY IN PHILADELPHIA

In accordance with the plan followed for several years past, speakers on appropriate public health topics will be furnished for the churches, June 21, the Sunday preceding the session, only this year, instead of furnishing speakers for Atlantic City churches, speakers will be supplied for all the churches in Philadelphia desiring an address on public health. This plan was followed last year in Minneapolis and St. Paul with great success, practically all of the churches participating, including the Jewish, Roman Catholic and all of the Protestant denominations. The work of supplying speakers for the churches is under the direction of the Council on Health and Public Instruction. A local committee, of which Dr. Edward Martin is chairman, has been appointed by the Philadelphia County Medical Society to cooperate with the Council in this work. Arrangements for filling the Philadelphia pulpits are now going on and it is anticipated that a large proportion of the eight hundred churches in Philadelphia will participate in the observance of Public Health Sunday in the churches. Further details will be given later as the plans develop.

SOCIAL ENTERTAINMENTS

(The official Fellow's badge, or one of those provided for ladies and guests, will be required for admission to entertainments, and to piers and other places to which free entrance is granted to those in attendance on the annual session.)

An excellent series of entertainments and amusements has been provided for the Fellows and the visiting ladies.

Monday night there will be banquets and smokers of some of the societies which meet before the session.

Tuesday night, the banquets, smokers and vaudevilles of the sections and the various medical alumni and class reunions.

Wednesday night a reception and ball in honor of the President will be given in the Music Room, Steel Pier. This is the most formal of the social functions of the meeting.

Thursday night there will be a musicale in the Ball Room and Music Room on the Steel Pier.

The program for the ladies' entertainment includes an introduction reception Tuesday afternoon; formal reception at the Marlborough-Blenheim at 2 o'clock Wednesday afternoon, and *thé dansant* at 4 o'clock Thursday afternoon at the Atlantic City Yacht Club.

ALUMNI REUNIONS

Alumni Associations that may desire to hold reunions during the meetings of the American Medical Association are requested to communicate, through their secretaries, with Dr. Joseph C. Marshall, Chairman of the Committee on Alumni Entertainments, 1517 Pacific Avenue, Atlantic City, the date desired for such meetings and any suggestions of entertainments they may wish to provide should be stated. Places of meeting or entertainment will be selected for them on request.

THE SECTION BANQUETS

The customary banquets of the sections of the Association will occur on Tuesday evening, June 23, at 7:30 o'clock (unless otherwise announced). Tickets are obtainable from the secretaries of the respective sections.

A joint dinner of the Section on Ophthalmology and the Section on Laryngology, Otology and Rhinology in honor of their guests, will be held at the Hotel Shelburne at 7 o'clock on Tuesday evening, June 23. The dinner will be followed by a Section burlesque arranged especially for this occasion by the Entertainment Committee: Joseph D. Lewis, Chairman; Carl Fisher; Ross H. Skillern, and George S. Crampton.

BANQUET OF WOMEN PHYSICIANS

The women physicians attending the meeting of the American Medical Association will have a dinner at the Hotel Chelsea, Tuesday evening, June 23, at 7:30 o'clock. Those desiring to attend will please remit $3 to Dr. Clara K. Bartlett, 4301 Atlantic Avenue, Atlantic City.

ALPHA OMEGA ALPHA

The Alpha Omega Alpha Fraternity will meet at the Seaside Hotel, Wednesday, June 24. A luncheon will be served at 12:30 p. m., and a short session will be held immediately following.

MEETING OF NON-AFFILIATED ORGANIZATIONS

The American Academy of Medicine is to meet in Atlantic City, June 19-21. The headquarters and meetings will be at the Hotel Dennis. The social session and banquet will be given at the same place on the evening of June 20, at 7 o'clock. The general topic of the meeting will be "The Practice of Medicine and the Industries," and several valuable papers are promised.

ASSOCIATION OF STATE SECRETARIES AND EDITORS

Dr. Lillian H. South, secretary of the Association of State Secretaries and Editors, announces the annual dinner of this organization to be held at the Marlborough-Blenheim, Monday evening, June 22, at 7 o'clock. This year it will be a subscription dinner at $3.50 a cover. All secretaries and editors are requested to be present and to advise Dr. South as early as possible if they are planning to attend, in order that places may be reserved. An interesting program is being arranged for this occasion. Remember to bring your Association bar pin with you to the meeting.

POST-OFFICES AND TELEPHONES

An Association Post-Office will be maintained at the Registration Bureau in the Exposition Building, Kentucky Avenue and Boardwalk. Guests are requested to order mail addressed to them "Care American Medical Association, Exposition Building," or to their hotels, as preferred.

Telephone booths will be provided at each meeting-place for the use of Fellows.

THE COMMERCIAL EXHIBIT

Books, Instruments, Surgical Appliances, Foods, Drugs, Furniture, Etc., to be Shown at Atlantic City

The commercial exhibit at the Atlantic City session will have commodious quarters in the Atlantic City Exposition Building, corner of Kentucky Avenue and the Boardwalk. The scientific exhibit, registration department, post-office, information bureau, etc., will be under the same roof as the commercial exhibit.

The sincere and studious efforts of the various firms have made the commercial exhibit a real educational demonstration of medical, surgical and pharmaceutical advances. Each succeeding year sees this feature of the meeting appealing more directly to the members of the profession. Here the physician is offered annually an opportunity to become posted on the newer methods introduced in medical work and to obtain this information through demonstrations which are practical and easily remembered with a small expenditure of time. It is the earnest desire of the officials who superintend the exhibits to have each display of such high class that it will be instructive and beneficial and may rightly be regarded by the profession as a part of the educational advantages of the meeting.

Physicians are urged to feel free to examine each exhibit and to ask questions concerning every demonstration in which they are interested. They can do this without fear of importunity to purchase unless they desire to do so, since one of the principal purposes of the demonstrations given in connection with exhibits is to obtain an interchange of opinion which will mutually benefit both the physician and the manufacturer.

In short, as one physician remarked, these exhibits contain a mine of new ideas for the practitioner who at home is usually so much absorbed in the daily cares of routine medical work that he does not have time to keep abreast of present advances through current medical literature. Dr. Edward Guion of Atlantic City is the local chairman and Will C. Braun, 535 North Dearborn Street, Chicago, Ill., is the superintendent of exhibits.

Following we give a list of the exhibitors with a series of brief notices concerning those firms from whom we have received a statement descriptive of their exhibits.

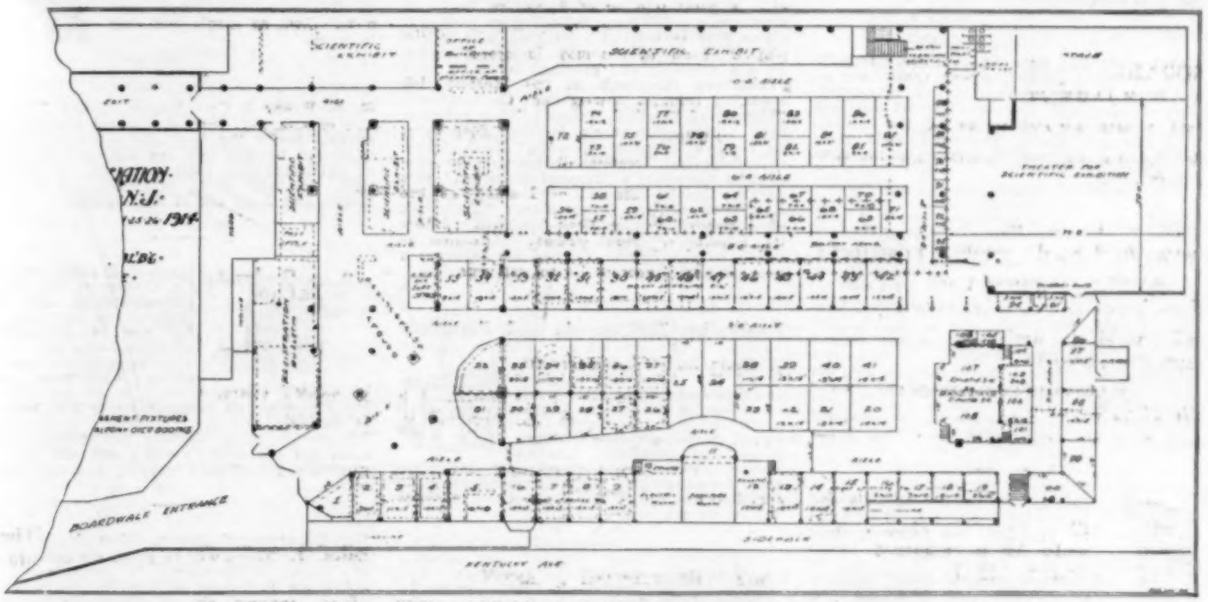


DIAGRAM OF EXHIBIT HALL

Exhibitors

	Space
Allison Co., W. D., Philadelphia	83
Ambroid Co., New York City	18
Ambulatory Pneu. Splint Mfg. Co., Chicago	10
Anatomik Footwear Co., New York City	44
Antiseptic Supply Co., New York City	85
Apollinaris Agency Co., New York City	11
Appleton & Co., D., New York City	26
Arlington Chemical Co., Yonkers, N. Y.	54
Armour & Co., Chicago	74
Bausch & Lomb Opt. Co., Rochester, N. Y.	86
Bard, Charles R.	102
Berger Bros., New Haven, Conn	94
Betz Co., Frank S., Hammond, Ind	21-40
Blakiston's Son & Co., P., Philadelphia	4
Borden's Condensed Milk Co., N. Y. City	96-97
Brady & Co., Geo. W., Chicago	92
Brown, D. V., Philadelphia	28
Burdick Cabinet Co., Milton, Wis	12
Burroughs Wellcome & Co., N. Y. City	84
Campbell Electric Co., Lynn, Mass	68
Carnes Artif. Limb Co., Kansas City, Mo.	76
Castle Co., Wilmot, Rochester, N. Y.	73
Chicago Medical Book Co., Chicago	50
Crown Surg. Inst. Co., N. Y. City	100
Davis Co., F. A., Philadelphia	17
Deimel Linen-Mesh System Co., N. Y. City	34
De Vilbiss Mfg. Co., Toledo, Ohio	8
De Zeng Standard Co., Camden, N. J.	78
Electro Surgical Inst. Co., Rochester, N. Y.	38
Fairchild Bros. & Foster, N. Y. City	2
Forbes Dry Plate Co., Rochester, N. Y.	60
Green & Bauer, Hartford, Conn	91
Hardy & Co., F. A., Chicago	75-77
Hoeber, Paul B., New York City	1
Horlick's Malted Milk Co., Racine, Wis.	5
Hygienic Fibre Co., New York City	82
Hynson Westcott Co., Baltimore, Md.	33
Indiana Springs Co., Kramer, Ind	95
Jaeckh Mfg. Co.	102
Johnson & Co., Mead, Jersey City, N. J.	49
Kelley-Koett Mfg. Co., Covington, Ky.	98
Kny-Scheerer Co., New York City	87
Lea & Febiger, Philadelphia	3
Leitz, Ernst, New York City	7
Lentz & Sons, Chas., Philadelphia	35
Life Savings Devices Co., Chicago	99
Lippincott & Co., J. B., Philadelphia	52-53
Macalaster, Wiggin & Co., Boston	57
Machlett & Son, E., New York City	103
Maltine Co., The, Brooklyn, N. Y.	89-90
McIntire, Magee & Brown Co., Phila.	71
McIntosh Bat. and Opt. Co., Chicago	81
Mellins Food Co., Boston	55
Meyer & Co., Wm., Chicago	47
Meyrowitz, Inc., E. B., N. Y. City	43
Miller Rubber Co., The, Akron, Ohio	69-70
Morris & Schraeder, New York City	61
Mosby Co., C. V., St. Louis, Mo.	56
Mueller & Co., V., Chicago	29-30
Mulford Co., H. K., Philadelphia	42
Physicians' Specialty Co., Leesburg, Va.	101
Physicians' Supply Co., Philadelphia	48
Pierce, Harvey R., Philadelphia	67
Pilling & Son, Geo. P., Philadelphia	51
Pompeian Co., The, Washington D. C.	88
Precision Thermom. & Inst. Co., Phila.	13
Pulvola Chemical Co., Jersey City, N. J.	106
Radium Chemical Co., Pittsburgh, Pa.	62
Rebman Company, New York City	80
Reinschild Chemical Co.	79
Sanitary Products Co., Chicago	37
Saunders Co., W. B., Philadelphia	31-32
Scheidel-Western X-Ray Coil Co., Ch'go.	107-108
Schering & Glatz, New York City	105
Schieffelin & Co., New York City	6
Scholl Mfg. Co., Chicago	58
Smith, Kline & French Co., Philadelphia	9
Snook-Roentgen Mfg. Co., Philadelphia	14
Spirella Co., The, Philadelphia	65
Squibb & Son, E. R., New York City	72
Storm, Dr. Katherine L., Perkasie, Pa.	66
Surgical Narcosis Supply Co.	Table Space
Taylor Inst. Co., Rochester, N. Y.	24-25
Teter Mfg. Co., Cleveland, Ohio	16
Van Orden Corset Co., New York City	36
Victor Electric Co., Chicago	63-64
Waite & Bartlett Mfg. Co., N. Y. City	104
Wall & Ochs, Philadelphia	27
Wampole, H. K., Philadelphia	20
Wappler Electric Mfg. Co., N. Y. City	22-39
Weder Manufacturing Co., Philadelphia	59
Weisafeld Bros., New York City	85
Welch Grape Juice Co., Westfield, N. Y.	45-46
White Sulphur Springs	19
Wilson & Wilson, Boston	91
Wood & Co., Wm., New York City	41
Woolf, Michael, New York City	15
Zemmer Co., Pittsburgh, Pa.	73

Publishers and Books

D. APPLETON & Co., New York City. Space 26. A representative number of new medical books will be displayed, including "Anemia and Resuscitation," by George W. Crile, A.M., M.D. "Borderline Diagnosis," by J. N. Hall, B.S., M.D. Stockton's "Diseases of the Stomach," Behan's monograph on "Pain," and Dr. W. Gilman Thompson's "Occupational Diseases." Two of their most important publications, Gwathmey's "Anesthesia" and Kelly's "Kidney Diseases," are shown in proof form.

P. BLAKISTON'S SON & COMPANY, Philadelphia. Space 4. During the past year this firm have made large progress in the work of "service-giving" to the profession. Their product has been large and the quality right up to the Blakiston standard. Representatives of the firm will have much of interest and value to present, especially in books on Diseases of Children, Diseases of Old Age, Practice of Medicine, Obstetrics, Ophthalmology, Surgery, Chemistry and Clinical Diagnosis.

CHICAGO MEDICAL BOOK CO., Chicago. Space 50. Will exhibit a most complete assortment of the latest English importations. A representative showing will also be made of the best and newest medical works of the various American publishers. These will make their booth one of the most interesting at the coming meeting.

PAUL B. HOEBER, New York City. Space 1. An exhibit of Medical Books that, on account of its variety, will interest every visitor. Their own publications, consisting of monographs by Osler, Ehrlich, Wright, Mackenzie, Lewis, Squier, Einhorn, Paget, etc., will be supplemented by the new and important English, German and French publications. There will also be the wonderful reproduction of Leonardo da Vinci's Anatomy, the original edition of Vesalius and other rare items. Specialists in all lines will find numerous monographs to interest them.

LEA & FEBIGER, Philadelphia and New York. Space 3. There will be exhibited the following new works: Ashhurst's Surgery, Lynch on the Rectum, Newcomet on Radium, Braun's Local Anesthesia, Norris on Blood-Pressure, Wright and Smith on the Nose and Throat, Knowles on Skin Diseases, Osler's "Modern Medicine," Vol. III, Goodman on Blood-Pressure. New editions just published: Kanavel on the Hand, Hare's Bedside and Office Diagnosis, Ballenger on the Nose, Throat and Ear, Jackson on the Skin, Harrington's Hygiene.

J. B. LIPPINCOTT COMPANY, Philadelphia. Spaces 52 and 53. Numerous new, modern and practical books by authoritative writers on medical subjects and allied sciences will be found at this exhibit. A series of remarkable enlarged anatomical studies from Piersol's Anatomy is to be a feature of the exhibit, which every practitioner will want to see.

C. V. MOSBY COMPANY, St. Louis, Mo. Space 56. Will feature Loeb's "Operative Surgery of the Ear, Nose and Throat," two volumes; Crossen's "Operative Gynecology"; Barnes' "The Tonsils"; Hoyt's "Practical Therapeutics"; Gardner-Simonds' "Handbook of Practical Sanitation." They will also have an attractive line of monographs. Their new and revised Golden Rule Series will be one of the special features of the display.

REBMAN COMPANY, New York. Space 80. Attention is drawn at this exhibit to Schmidt "Malignant Tumors of the Abdominal Viscera." Rudolf Krause "A Normal Course in Histology." Krause "Surgery of the Brain and Spinal Cord." Ruttin "Diseases of the Labyrinth." Mitchell "Doctor in Court." Reed "Sex; Its Origin and Determination." Kingsbury "Dermochromes." Gardner "Iconograms." Sabouraud Regional Dermatology" (new edition). Greeff "External Diseases of the Eye" (new edition).

W. B. SAUNDERS COMPANY, Philadelphia. Spaces 31 and 32. There will be many new books and new editions in this exhibit of unusual value, such as Crile and Lower's Anoci-Association, Thomson's Clinical Medicine, Kerley's Practice of Pediatrics, Allen's Local Anesthesia, Murphy's Clinics for June, a new Mayo volume, Ward's Clinical Hematology, Kaplan's Serology of Nervous and Mental Diseases, Mallory's beautiful Pathologic Histology, new editions of Da Costa's Modern Surgery, Grulee's Infant-Feeding, Brill's Psychanalysis, Stelwagon's Diseases of the Skin, etc.

WILLIAM WOOD & Co., New York City. Space 41. A great number of important books of most recent publication, indicating an unusually active year in medical publishing, will be displayed. Some of the most important works, from a scientific and practical viewpoint are: "Reference Handbook of the Medical Sciences," 8 volumes, new edition; Cunningham's "Manual of Practical Anatomy," two volumes, new edition; Stedman's Medical Dictionary, La Garde's "Gunshot Wounds," Yeo's "Manual of Medical Treatment," two volumes, new edition; Castellani's "Tropical Medicine," new edition; May's "Manual of Diseases of the Eye," new edition; Cunningham's "Text-Book of Anatomy," new edition; Tredgold's "Mental Deficiency," new edition. Attention is called to the *British Journal of Surgery*, a new quarterly, now in its second year.

Apparatus, Instruments and Furniture

W. D. ALLISON Co., Indianapolis. Space 83. Attractive, practical and time-saving office devices will be shown at this space. Automatic tables; ingeniously designed medicine cabinets; examining and treatment chairs; stools; stands; waste receptacles; reception-room furniture, and everything incident to the complete modern office. Representative styles will be on exhibition.

ANATOMIK FOOTWEAR CO., New York City. Space 44. Their shoes for men, women and children will be exhibited. The construction of their footwear is such that it affords full support for the whole of the foot, whereas in ordinary shoes (as illustrated in the accompanying sketch), the weight-bearing part of the foot overhangs the base of the shoe.

BAUSCH & LOMB OPTICAL Co., Rochester, N. Y. Space 86. New models in microscopes, microtomes, centrifuges and other laboratory apparatus and supplies will be displayed by this firm. The instruments shown will form an instructive demonstration of the most recent improvements in diagnostic apparatus which advances in laboratory examination have made necessary.

FRANK S. BETZ Co., Chicago. Spaces 21 and 40. This exhibit will consist of an unusually large display of surgical instruments, batteries, operating-tables, lamps, sterilizers, high-frequency outfits and complete medical, surgical and hospital equipment. A special feature of this exhibit will be a flash coil which makes a skiagraph of the chest of the heaviest patient after very brief exposure.

GEO. W. BRADY & Co., Chicago. Space 92. There will be exhibited some of the work done by various x-ray operators who are using the new Paragon X-Ray Plates. These plates are said to have met with great success since placed on the market, owing to their very fine quality, great speed and accuracy in bringing out minuteness of detail and shadow outlines.

DEVILBISS MANUFACTURING COMPANY, Toledo, Ohio. Space 8. A display of a full line of prescription and patients' atomizers. Special attention will be called to the style of construction used in the manufacture of DeVilbiss Atomizers, their utility and their advantages for both office and prescription purposes.

FORBES DRY PLATE Co., Rochester, N. Y. Space 60. This firm will display a very interesting series of radiographs made on Forbes X-Ray Plates showing their extremely wide latitude, the quality attained in Forbes Plates which reduces the chance of failure to a minimum and makes them so simple and easy to work.

F. A. HARDY & Co. Spaces 75 and 77. A line of eye, ear, nose and throat surgical instruments—for the most part specialties manufactured by this firm—as well as a number of ophthalmologic specialties, will be exhibited. All instruments on display will be up-to-date and many are of new design.

JAECKH MANUFACTURING Co., Cincinnati, Ohio. 102. Demonstrations will be made of cleaning machines for use in residences, hospitals, etc., air compressing machines for supplying compressed air in medical offices, garages or in any building where an air pressure up to 200 pounds is desired; the new Robertson Compressed Air and Vacuum Machine constructed especially for the doctor's office, and also an inexpensive yet efficient spraying and nebulizing outfit.

KNY-SCHEERER COMPANY, New York City, Space 87. There will be given demonstrations of latest improvements in operating-tables adjustable in height to suit the convenience of the surgeon, the Hawley table for the suspension and immobilization of the trunk and extremities without lifting or disturbing the patient, the Honan apparatus for anesthesia by the intravenous route and modern sterilizing apparatus of all kinds.

ERNST LEITZ, New York City, Space 7. This firm will follow its policy as in past exhibitions to display everything in the way of optics for equipping the private practitioner's laboratory and laboratories of hospitals and medical schools. Some new instruments to be exhibited are the Leitz New Microscope II S, Leitz Thoma-Metz Haemacytometer, Leitz Binocular Microscope with Single Objective, Leitz Greenough Binocular Microscope, Leitz Improved Base Sledge Microtome.

THE MCINTIRE, MAGEE & BROWN Co., Philadelphia. Space 71. This firm has something worth "Blowing about" in the new model Ophthalmometer for measuring the curves of the Eye Cornea correctly. Also the improved adjustable instrument table as well as the Phoria-Meter for measuring the amount of muscular imbalance of the eye at the reading distance. These and many other useful accessories and office equipment for the Oculist's use will be demonstrated.

CHAS. LENTZ & SONS, Philadelphia. Space 35. An extensive exhibit of many newly devised instruments will be completed for the occasion and the great diversity of apparatus shown will make this display of interest to all branches of the profession. A great many of the instruments to be shown have been perfected through the cooperation of a number of prominent surgeons of Philadelphia.

V. MUELLER & Co., Chicago. Spaces 29-30. A complete line of surgical instruments, electrically lighted diagnostic instruments, and in fact all modern surgical appliances will be demonstrated. Among other bone-operating engines will be shown the Martel Automatic Engine for cranial operations or for general bone operations. A number of new x-ray accessories, such as screens, protecting devices, measuring instruments, etc., will also be shown.

GEORGE P. PILLING & SON CO., Philadelphia. Space 51. The Faught Blood-Pressure Apparatus will be demonstrated by an expert on blood-pressure. A Faught apparatus will be shown that during the past two or three years has been recording more than 1,500 times up to the 450 point. The apparatus is only intended to register to 300 point. This particular demonstrating instrument has been used not only up to 300 point, but again half way around, which is equivalent to 450 mm.

PRECISION THERMOMETER AND INSTRUMENT CO., Philadelphia. Space 13. The many features which make for accuracy in diagnostic work as determined by the use of the new Nicholson Sphygmomanometer will be demonstrated. This mercurial apparatus is easy to read, simple to operate, records both systolic and diastolic blood-pressure, is not affected by climate or temperature and small in size so that it can be carried in the pocket.

SCHOLL MFG. CO., Chicago. Space 58. Physicians who are interested in orthopedic work will be interested in the demonstrations to be given at this booth. The orthopedic appliances originated by this firm offer practical and unique methods of fitting corrective supports to the individual foot.

TAYLOR INSTRUMENT COMPANIES. Spaces 24 and 25. At this exhibit a staff of trained medical men will demonstrate the use of the "Tycos" sphygmomanometer in general practice. The demonstrations will cover the taking of systolic, diastolic, and pulse-pressure. New booklets and other literature on the relation of blood-pressure in diagnosis of acute and chronic diseases will be distributed. Besides the "Tycos" sphygmomanometer, this exhibit will include a display of "Tycos" fever thermometers.

WILMOT CASTLE COMPANY, Rochester, N. Y. Space 73. Those interested in sterilizing equipment for hospitals will find the Castle Pressure Dressing Sterilizer for bed pans of particular interest. This firm will also show the newest Castle-Rochester Outfits designed for offices and small hospitals; a Catheter Sterilizer; small Water Still; Milk Pasteurizer, etc. Information in regard to the design and construction of the complete line of Castle Hospital Sterilizers will be supplied.

WALL & OCHS, Philadelphia. Space 27. The Ultex "one-piece" Bifocal Lens will be exhibited. This appliance is formed from a solid piece of crown glass and having two wholly distinct spherical curves upon one surface. In this lens there is no zone of cloudiness, no distortion of the object being viewed and no rainbow colors.

THE PHYSICIANS SUPPLY CO. of Philadelphia. Space 48. A full line of high grade surgical instruments, especially the latest in nose and throat specialties; also electrically lighted diagnostic instruments, sterilizers, bags and medicine cases will be displayed.

MICHAEL WOOLF, New York City. Space 15. This firm, known as "The B House of New York," will exhibit many attractive ophthalmic specialties, including the new model of their Ski-optometer and combined muscle test. Their eye, ear, nose and throat adjustable electric bracket and lamp and other electric specialties have always made their exhibit a most interesting one.

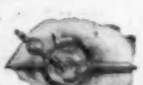
Apparatus—Electric

DEZENG-STANDARD CO., Camden, N. J. Space 78. Several new instruments will be exhibited. Among them a socket current controller embodying new and highly important features; an improved type of Electric Ophthalmoscope; a greatly improved model Naso-Pharyngoscope having external snap contact and upright image; a line of new instrument tables; a new electric near-point muscle test for use with the DeZeng Phoro-Optometer. Also a full line of electrically lighted diagnostic instruments for eye, ear, nose and throat work. Demonstration daily.

ELECTRO SURGICAL INSTRUMENT COMPANY, Rochester, N. Y. Space 38. Instruments made by this firm are constructed after the designs and suggestions of many physicians based on their practical experience. A line of electrically lighted diagnostic and operative instruments will be exhibited, such as urethroscopes, proctosigmoidoscopes, mastoid transilluminators, cystoscopes, nasopharyngoscopes, etc. Controllers and socket cautery transformers will also be shown.

GREEN & BAUER, INC., Hartford, Conn. Space 91. The well-known Clover Leaf X-Ray Tubes will comprise the main feature of this exhibit. It will be explained why the quality of these tubes is unsurpassed for all purposes and physicians will be enabled to observe the proper technic of manipulating them as demonstrated by experts in radiography and phototherapy.

MACALASTER, WIGGIN CO., Boston and Chicago. Space 57. A fine line of x-ray tubes and accessories will be shown. They have developed a new water-cooled tube which radiographers state is doing splendid work. The target is of tungsten, and the water chamber is large, allowing long, continued runnings without over-heating. The regular line of tubes and accessories also will be shown.



THE WM. MEYER CO., Chicago. Space 47. A demonstration of their well-known line of interrupterless X-Ray equipments with the latest improvements in same, in the way of radiography and fluoroscopy without any guess work, also a moderate-priced klinoscope, which will do both vertical as well as horizontal fluoroscopic work. All the other various X-Ray appliances made by this company will be demonstrated.

MCINTOSH BATTERY & OPTICAL CO., Chicago. Space 81. There will be demonstrated a new X-Ray Transformer, combining speed, efficiency and protection. Visiting radiologists will be presented with a valuable x-ray appliance especially prepared for this meeting. The McIntosh Universalmode, Polysine Generator, Portable Coils and other specialties will be shown.

E. B. MEYROWITZ, Inc., New York. Space 43. Will exhibit a full line of ophthalmological apparatus and special instruments. Among these might be mentioned the Marple Electric Ophthalmoscope, Klaar Headlight, Zeiss Magnifying Loupe, a most convenient form of Pocket Battery, a "Shockless" Rheostat, a new form of Mouth Gag, Nernst Operating Lamp and a full line of eye, ear, nose and throat instruments.

E. MACHLETT & SON, New York City. Space 103. X-Ray tubes for deep therapeutic and radiographic work will be demonstrated. Physicians will be given an opportunity to see the tube in operation and the technic of applying it therapeutically will be explained.

SCHEIDEL-WESTERN X-RAY COIL COMPANY, Chicago. Spaces 107-108. Whether you are an x-ray operator or not, this exhibit will prove particularly interesting. Demonstrations will be given daily of the latest apparatus for roentgenoscopic examinations. There will also be shown a new interrupterless transformer which is said to be the first machine of this type where both the voltage and amperage will be under absolute control at all times.

VICTOR ELECTRIC CO., Chicago. Spaces 63 and 64. New apparatus and accessories brought out since the Minneapolis meeting will constitute the exhibit of this well-known concern, and there will be plenty to interest every physician or surgeon, regardless of his specialty, for this firm reports that it has broken more of its records for turning out new apparatus, during the past year, than during any similar period in its history.

WAPPLER ELECTRIC MANUFACTURING CO., Inc., New York City. Spaces 22 & 39. A large exhibit of electro-medical and therapeutic apparatus and electro-surgical and diagnostic instruments. There will be demonstrated the interrupterless King model X-Ray machines and interrupterless treatment type X-Ray machines which are fitted with their new single-impulse timer, and also fitted with a new serial timer. The exhibit will also include the Excell high frequency machine and a complete line of cystoscopes, urethroscopes, headlights, diagnostic instruments, controllers, pantostats, galvanic and faradic wall plates, etc.

WEDER MANUFACTURING CO., Philadelphia. Space 59. A demonstration of the "De Lyte Surgeon," ever-ready case, consisting of electric light, directly transmitted, (1) through Ear Speculum, magnifying tympanic membrane, (2) through Nasal Speculum, showing turbinates, allowing packing for hemorrhage under direct illumination, (3) by using attachable Tongue Depressor, illuminating the throat, (4) for transillumination of sinuses, (5) with head-band attachment, for emergency operation.

Foods and Milk Preparations

BORDEN'S CONDENSED MILK CO., New York City. Spaces 96-97. At these booths not alone will the firm exhibit their Malted Milk in powder form, but they will also serve Borden's Malted Milk Ice Cream. To those who have tasted this ice cream in the past, this will be a welcome announcement. To those who have not this is an urgent invitation to try it.

HORLICK'S MALTED MILK CO., Racine, Wis. Space 5. As in past years this firm will display the Original-Genuine Malted Milk, together with Horlick's Food and Horlick's Diastoid. They will also serve the delicious Horlick's Malted Milk Ice Cream, which has made the "Horlick Booth" so popular at conventions all over the country.

The Mellin's Food Method of Milk Modification

Mellin's Food Company, Boston. Space 55. Physicians are cordially invited to make every inquiry regarding Mellin's Food and its use. Demonstrations will be made to show why there is a distinct advantage to the physician, to the mother and to the baby in the employment of the simple measures suggested in the plan upon which the Mellin's Food Method of Milk Modification is based.

Mead Johnson & Company, Jersey City, N. J. Space 49. An exhibit of their Dextri-Maltose (pure maltose and dextrin in about equal parts) will be made. It is a practical duplicate of the malt-sugar and dextrin preparations made in Germany, where they are largely used by pediatrists, especially those who employ the Finkelstein method of infant feeding.

ESKAYS Albumenized FOOD

Smith, Kline & French Co., Philadelphia. Space 9. Will show how Eskay's Food modifies cow's milk. The cereals preventing the formation of hard cheesy curds, while the other ingredients in its composition make up the deficiencies of cow's milk so that it will similate mother's milk.

Welch Grape Juice Company, Westfield, N. Y. Spaces 45 and 46. This firm will have a large and handsome booth in the form of a grape arbor, completely covered with artificial grapes and vines, from which will glow hundreds of tiny electric lights. Here Welch's The National Drink will be dispensed to the Delegates and their friends. In addition to its food value, Welch Grape Juice is being used by physicians as an excellent menstruum in which to administer oily and other disagreeable medicines.

Pharmaceuticals and Biologic Products

Antiseptic Supply Co., Inc., New York City. Space 85. An interesting exhibit of Causticks, Stypsticks, etc., the new form of applying silver nitrate, copper sulphate, alum, etc. Their use avoids the necessity of applying the same applicator in the consecutive treatment of different patients. Samples and descriptive literature will be distributed to all physicians who visit this booth.

Arlington Chemical Co., Yonkers, N. Y. Space 54. Liquid Peptonoids and Dry Peptonoids Soluble will be exhibited together with Hemaboloids made by the associate of this firm, the Palisade Mfg. Co. A new reagent, Arlco-Urease (a urea- splitting ferment) will also be made a part of the exhibit of the former company. This firm will also conduct an accommodation bureau giving visiting physicians free service for writing letters. Competent stenographers will be in constant attendance.

Armour and Company, Chicago. Space 74. Therapeutic products made from glands and membranes supplied from the abattoirs, such as Corpus Luteum, Standardized Thyroids, Parathyroids, Suprarenals, Thymus, Spleen and Pituitary substances in powder and tablets. Also Pituitary Liquid, a solution of the active principle of the posterior lobe of the pituitary body; Red Bone Marrow, Lecithol, an emulsion of lecithin; Pepsin and Pancreatin in various forms for the profession.

Atophan antiarthritic analgesic antipodagric antipyretic

Schering & Glatz, New York City. Space 105. An exhibit of the more recently introduced products of their extensive list of well-known synthetic chemical therapeutic agents. The firm will be glad to give information concerning all of these, as well as their organo-therapeutic and other preparations.

Reinschild Chemical Co., New York City. Space 79. The special ferruginous preparations —formulated by Dieterich—will be exhibited. Also agar-agar combinations prepared for administration according to the formulas of Dr. Max Einhorn.

Fairchild Bros. & Foster, New York City. Space 2. There will be exhibited Essence of Pepsin-Fairchild, the gastric gland extract; Holadin, the entire pancreas gland extract (powder) in enteric capsules; Holadin and Bile Salts; Panopepton, the food for the sick; Enemose, for colonic alimentation; the Fairchild Culture of the Bacillus Bulgaricus in sealed glass vials and in desiccated form in the Lactic Bacillary Tablets, and other Fairchild products.

H. K. Mulford Company, Philadelphia. Space 42. A scientific exhibit of bacterins, serums, sero-bacterins and vaccines. Showing methods of production with working bulletins compiled from the latest information on the special subjects treated. This is not only designed to be an interesting but an instructive scientific exhibit to aid every practitioner.

Schieffelin & Co., New York City. Space 6. An exhibit of the biologic products, including diphtheria antitoxin, tetanus antitoxin, anti-streptococcic serum, vaccine virus and bacterial vaccines. The method employed in the production of these products will be shown in more or less detail, and will be explained by those in charge of the exhibit. The various containers of the products will also be exhibited.

E. R. Squibb & Sons, New York. Space 72. Will give demonstrations of the disintegrability of their tablets and also exhibit a representative collection of their high quality chemicals and pharmaceuticals, together with some of the impurities removed from the regular U. S. P. grade of products in the process of repurification necessary to bring the articles up to the Squibb standard.

Henry K. Wampole & Co., Inc., Philadelphia. Space 20. Pharmaceutical products will be displayed by this firm, including those prominently identified with U. S. P. and N. F. standards. Pulverous pills, fluidextracts, elixirs, syrups, solutions, tinctures, ointments, soft elastic and hard gelatin capsules, effervescent salts, lozenges, compressed and hypodermic tablets will be aptly displayed in illustration of the advanced achievements to-day of the manufacturing pharmaceutist.

The Zemmer Company, Pittsburgh. Space 23. An exhibit of their line of pharmaceutical products, comprising tablets, lozenges, dry-filled capsules, ointments, eye ointments and hypodermic tablets. This display will be of practical interest.

Artificial Limbs, Orthopedic and Supportive Appliances

Ambulatory Pneumatic Splint Manufacturing Co., Chicago. Space 10. Will demonstrate the advantages of Ambulatory Pneumatic Splint for reduction, bed and walking treatment of various fractures of lower limbs, also "Ambumatic" Washable Abdominal Supporters. Also a demonstration of 'Ambumatic" Flaxall Pure Linen Mesh Underwear, and of latest artificial limb, non-visible extension shoes and non-visible orthopedic appliances.

Berger Brothers Co., New Haven, Conn. Space 94. Spencer Abdominal and Spinal Supports will be exhibited. In addition to an interesting showing of supporting corsets and non-elastic belts, a limited number of copies of a new booklet on abdominal supports will be distributed gratis. The booklet analyzes, by means of pictures, the relative merits of various types of abdominal support.

Van Orden Corset Co., Newark, N. J. Space 36. An interesting exhibit in which the La Grecque Surgical Corset will be demonstrated and its actual results on a specific case, under the care of a physician of standing, is to be shown by radiographs.

Carnes Artificial Limb Company, Kansas City, Mo. Space 76. Will exhibit an artificial arm and hand made of steel and fiber of such ingenious mechanical construction as to enable the wearer to automatically bend the elbow, bend and turn the wrist and open and close the fingers. The demonstration will be by men wearing the arm and will consist of such feats as writing, lighting a pipe or cigar, picking up suitcases, satchels, etc.

Spirella PHYSICIANS' APPLIANCES

Spirella Company, Inc., Meadville, Pa. Space 65. Will exhibit their line of physicians' appliances, asking particular attention to their binder over which measurements are taken; a new shoulder-brace and poise-correcting belt and corsets for the correction of splanchnoptosis and spinal curvature. The value of their exclusive stay in maintaining support without atrophy will be demonstrated.

Dr. Katherine L. Storm, Philadelphia. Space 66. It has been observed that many physicians use this belt for one or two conditions, as for operations or ptosis, and fail to realize its many-sided usefulness. Fitters employed by the firm will be at this exhibit to explain the efficiency of the appliance as a support in hernias, pregnancy, obesity, sacro-iliac relaxations and other unusual requirements.

Mineral Waters

Apollinaris Agency Company. Space 11. Apollinaris water, which is mildly alkaline and naturally effervescent, will be exhibited. It is bottled only at the Apollinaris spring, Neuenahr, Germany, and only with its own natural gas, as stated on the label. The same company will also exhibit "Apenta," the Hungarian natural aperient water, which is noted for its well proportioned content of magnesium sulphate and sodium sulphate.

Morris & Schrader, New York City. Space 61. An exhibit of Contrexéville water, which will be dispensed *ad libitum*. A full description of the various varieties will accompany the exhibit.

Miscellaneous

Deimel Linen-Mesh System Co., New York City. Space 34. This Underwear was invented by Dr. Henry L. Deimel, a California physician, some twenty years ago. The Seventeenth International Congress of Medicine held in London last August awarded this hygienic underwear a Gold Medal. There will be on exhibit different weights of cloth and the latest style garments.

Indiana Springs Co., Mudlavia, Kramer, Ind. Space 95. For the benefit of physicians who have not had an opportunity to visit Mudlavia, this company will maintain an exhibit showing in pictorial detail their special therapeutic agent, the Mudlavia Bath. Beginning with a view of the mud deposit in the natural state, the various steps in the process to completion of the bath will be shown; likewise the buildings and grounds with their special equipment.

The Pompeian Co., Washington, D. C. Space 88. Patients often refuse to take olive oil because the brand they purchase has a disagreeable taste. At this exhibit physicians will be given an opportunity to examine and taste Pompeian Olive Oil which is an absolutely pure product, pressed from the right kind of fruit, picked at the right time and clarified in the right manner—this care in preparation retains in the oil its agreeable fruity flavor, making Pompeian Olive Oil unsurpassed for medicinal uses.

Radium Chemical Company, Pittsburgh, Pa. Space 62. The exhibit will consist of a display of Radium salts of high purity. These Radium salts are prepared from carnotite ore mined in Colorado. The production of Radium in America in 1914 will amount to twice the old world's production. Demonstrations of the Radium rays will be given daily.

Weissfeld Bros., New York City. Space 85. Hospital wearing apparel, physicians' coats, surgeons' gowns, duck suits, smoking jackets, bath robes, dressing gowns, washable uniforms of every description, etc., will be displayed.